The Cavendish Lecture

ON

SOME POINTS IN THE TREATMENT OF TYPHOID FEVER.

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BY SIR WILLIAM H. BROADBENT, BART., M.D., F.R.C.P. LOND.,

PHYSICIAN TO ST. MARY'S HOSPITAL AND CONSULTING PHYSICIAN TO THE LONDON FEVER HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—I shall not waste your time by any elaborate expression of thanks for the honour you have done me in appointing me your Cavendish lecturer, but simply say that I appreciate the honour very highly and at once enter upon my lecture.

Some explanation is perhaps necessary of the choice of the subject to be brought before the society. Surely, it may be said, the treatment of typhoid fever is sufficiently well understood. It has been carefully laid down by great clinical teachers, and, while new suggestions are multiplied on every hand, it may be objected either that they relate to details which afford no basis for a revision of principles, or that, on the other hand, they are of so radical, and even revolutionary, a character that time is required before a judgment can be given with regard to them. But there is no finality in medicine, no conclusion in therapeutics, in which we can for any length of time rest and be thankful, and no one who has written upon typhoid fever would claim to have said the last word upon the questions involved in its treatment. For my own part, I should desire to be understood not as speaking with authority, but simply as offering a contribution to the subject, the result of personal observation and thought. A special reason for a revision of our ideas as to the treatment of typhoid fever arises out of the more extensive and profound knowledge obtained in recent years of the part taken by specific microbes in the production of disease and in the determination of its course and duration. The life history of these micro-organisms has been followed out, the mode in which they influence the human system has been more or less definitely ascertained, the conditions under which their virulence is intensified or attenuated have been investigated, the processes by which their action on the organism is resisted and their lethal influence brought to an end have been studied. Again, while the bacteriologist has been engaged in identifying and studying the particular bacterium, or coccus, or protozoon which sets up a given disease, the chemist has been working for the discovery of germicides or bactericides which might destroy the morbific agents, and of substances which might protect the human system from their attacks, and naturally physicians have been eagerly inquiring how this knowledge may be turned to account in combating the diseases which they have to treat, and whether there may not be found in it resources which may render to medicine some such service as the researches of Sir Joseph Lister have rendered in surgery. The chemist, again, has placed at the service of the medical man products which possess the marvellous power of lowering the temperature of the body. These, at first sight, seem to be the very weapons we require with which to subdue fever. We have all looked with hope to these antiseptics and antipyretics, and it will be useful to compare notes on the methods we have employed and on the results we have obtained; and typhoid fever is a favourable field for such comparisons. But it is not simply on this account that I have taken it as the subject of this lecture. It is a disease possessing great clinical interest from the variety of features which it presents in different cases, and from the opportunities which it gives for careful observation and judicious modifications of treatment. Probably more frequently in it than in any other disease the medical man may turn the scale in favour of the patient, when the issue of life and death lies in the balance, by watchfulness, knowledge, and skill, and there is no better test of clinical sagacity and capacity than the conduct of a case of typhoid fever.

Nothing need be said as to the general management of the patient: nothing too emphatic could be said as to the importance of careful nursing. Very little, again, is necessary to be said on the subject of feeding, although, on this, success largely depends. The popular idea is that, the disease being one characterised by weakness, the remedy is nourishment and perhaps stimulants, and that the more the sufferer can be induced to take the better. One of the first tasks of the medical man is usually to prevent over-feeding. In the early stages of the disease any liquid offered is eagerly taken, especially if it is cold, and quantities of milk or milk-and-soda-water may be given altogether in excess of the powers of the digestion. Curds and other irritating products are thus formed which give rise to flatulent distension, nausea, and sometimes vomiting, and aggravate the intestinal catarrh. An average amount of food would be about two pints of milk and one of broth or beef-tea in the twenty-four hours, to be given eight or ten ounces at a time at intervals of about two and a half or three hours by day, and rather less frequently at night, so as not to interfere too much with sleep, the discretion of the nurse being exercised in this respect. But, while naming the above amount and character of nourishment as that to be aimed at, no absolute rule can be laid down as applicable to all cases. There are patients, for example, whose dislike for milk, with probably a corresponding incapacity for digesting it, is such that they cannot take it in any form, and we have to depend on broth and beef-tea or other meat extracts or preparations throughout. We may, again, be compelled to give the nourishment more frequently from the first, because only a small amount can be taken at a time, and as the case progresses the intervals almost always have to be shortened on this account. An absolutely indispensable guide to the feeding of the patient is regular and systematic inspection of the dejecta. This is the secret of success in the treatment of typhoid fever. The medical man ought to see every stool which is passed, or, if this is for any reason impracticable, at least one motion every day. It is only by personal examination that he can know the amount and significance of the diarrhœa—whether, for example, it is copious or only frequent, each action being scanty, and can tell when and in what way to step in and interfere. The character of the motions, again, often reveals the cause of any special disturbance of the bowels. A particularly offensive smell and unusual colour may indicate septic processes in the intestinal contents, or it may be seen that some article of diet is playing the part of an irritant—as, for example, strong beef-tea. If undigested milk appears in the evacuations, however finely the curds may be divided, irritation of the intestinal tract is sure to follow, and probably diarrhœa. In this case measures should be at once taken to ensure the better digestion of the milk. Soda-water or lime water may be added to it with a view to prevent premature coagulation, or it may be diluted with barley water, which does not permit of the formation of large solid curds. More effectual than either of these expedients is the peptonisation of the milk. This unfortunately destroys its natural flavour and gives it a more or less bitter and disagreeable taste, so that patients usually dislike it, which interferes with its usefulness. When it is necessary to peptonise the milk it should be done thoroughly, according to the method described by Sir William Roberts.

The subject of stimulants, again, will require only a very few words. Were I speaking only to this society I should need to do no more than express my general agreement with the conclusions set forth in the excellent address of your President, Dr. Donald Hood. The part which stimulants take in the treatment of typhoid fever is chiefly to carry the patient through the later stages of the disease when the nervous system is exhausted, the circulation failing, and digestion all but suspended, or as an accessory to cold bathing. Many cases do not really require stimulants from first to last; in no case should they be given at once as a matter of routine. The indications which tell that they will be of service, and that the time has come for their use, are frequency and low tension of the pulse and dryness of the tongue, together with nervous and muscular prostration and mental confusion. The amount given should be small at first—one and a half, two, or three ounces of brandy—and it should be subdivided and taken with or after the milk or other nourishment. As the asthenic symptoms become more pronounced the amount will be increased, but always in a guarded manner. My own observation has led me to look upon ten ounces in the twenty-four hours as almost the maximum from which good effects may be expected. Beyond that amount stimulants appear to make little impression on the symptoms, and it should be an object of solicitude not to

reach the full quantity prematurely. A change of stimulants often does better than an increase in the quantity, such as the substitution of whisky, or port, or old Madeira, or Malmsey, or champagne for brandy. It is a common idea that drunkards and persons habitually consuming a good deal of alcohol require large amounts when suffering from typhoid fever. I am not at all sure that they benefit by it; the vascular and nervous systems are so habituated to it that they make no response. Such patients are exceedingly likely to die however freely they may be plied with stimulants, and I am disposed to believe that they would have a better chance on abstinence than on alcohol, nux vomica or strychnine being given from the first. When stimulants are really necessary the good effects are seen in a lowering of the pulse-rate, the volume and tone being improved; usually also the temperature is somewhat reduced, the nervous system is steadied, and there is more restful sleep. A noteworthy point is that there is no odour of alcohol in the breath. Whenever this is persistently present the stimulant is almost certainly doing harm instead of good. A regulated amount of brandy or other stimulant does not preclude the administration of a supplementary dose when called for by sudden faintness or failure of strength, or when the patient is exhausted by an action of the bowels.

While according to nursing and feeding and to the judicious employment of stimulants their full importance in the treatment of typhoid fever, the supervision and regulation of these do not exhaust the functions of the physician. He may very frequently influence favourably the course of the disease and contribute to the recovery of the patient by the use of drugs, and by other means outside the province of the nurse or beyond a mere attitude of expectancy, and he must at times, if he is to save life, interfere energetically. In no class of cases can it be said more forcibly that we do not treat the disease but the patient, in none is routine treatment less applicable. In the course of typhoid fever numerous injurious influences are in operation, dangers arise of a very varied character and there are diverse tendencies to death. We ought to have in our minds a clear perception of the processes which in a given case underlie the symptoms. This alone will give precision to our efforts to counteract their ill effects. With this view a classification of the morbid agencies which together constitute the disease may be of service.

Before entering upon this, however, there is one point, relating to general treatment, which may be conveniently discussed. It is, what should be done in case of sleeplessness, which is so common? While deprecating a premature resort to sedatives of any kind in typhoid fever, as in other conditions, when cold sponging fails to sooth the patient, and when it is clear that the restlessness and want of sleep are not due to flatulent distension of the stomach or other removable cause, it is, in my judgment, better to secure sleep by drugs than to allow the patient to pass wakeful and miserable nights. The drug I prefer is opium in some form or other. Phenacetin or antipyrin will often relieve the initial headache and give sleep, and phenacetin as the least mischievous member of the group may be given once or twice, but these substances are depressing, and, at the outset of a long and exhausting illness, any deduction from the sum total of the patient's forces is to be avoided. Chloral, again, distinctly lowers the vigour of the heart's action, and relaxes the arterioles, imitating thus the effects of fever on the circulatory apparatus. Experiment, moreover, has shown that it paralyses the phagocytes and renders them inert in the presence of bacilli which they would otherwise attack. Chloral is therefore inadmissible, and, it may be added, is usually ineffectual. Bromidia, which may be looked upon as chloral in disguise, often ordered I fear in ignorance of its composition, I should emphatically condemn. Bromides are less open to objection for occasional use, but are seldom of real service. When, therefore, a remedy for sleeplessness is needed it should, in my judgment, be sought in one or other of the preparations of opium or morphia. It has been objected that opiates derange the digestion. This has not been my experience, but they may be employed to disguise the effects of flatulence, the result of digestive derangements which ought to have been corrected.

Returning now to the various factors which enter into the disease, we can recognise three more or less distinct causes for the symptoms, each of which is attended with dangers of its own: (1) the operation of the poison; (2) the intestinal lesions; and (3) the protracted high temperature. The poison is the primary cause of the disease, and we may consider first effects traceable more or less directly to toxic influence on the system and the means by which they may be counteracted. The typhoid bacillus primarily sets up inflammation in the gland follicles of the intestine, but its activity is not confined to these structures. The bacillus is present also in the blood, and, whether in the blood or in the glands, it secretes, or produces by disintegrating the albuminoid substances in which it lives, a ptomaine which gives rise to fever, headache, prostration, and various effects on the nervous system. The febrile temperature is probably the direct result and the best measure of the activity of the bacteria which have entered the blood and been carried throughout the system. The first question to be considered is whether by any form of treatment the typhoid germs can be destroyed, or their action arrested, or their toxic influence counteracted. There has never been a time when physicians have not entertained the idea of cutting short fever. As the zymotic origin of fever gained acceptance efforts in this direction took more and more the form of antiseptics; and now that the typhoid bacillus can be isolated and its life-history followed, and that the effects of different agents on its vitality and virulence can be studied, it is natural that such efforts should be renewed. In endeavouring to estimate the probabilities of their success we must bear in mind that when symptoms appear the microbe has already eluded or overcome the phagocytes, protective alexins, and other defensive agencies, and has obtained an entry into the blood and tissues, where it is actively multiplying and producing its specific ptomaine. Now, it is exceedingly improbable that any antiseptic could be introduced into the blood in sufficient proportion to destroy the bacillus, or even materially influence its activity, which would not at the same time profoundly and injuriously affect the blood corpuscles and the gland and nerve cells. We get no encouragement from bacteriological research to look forward to the destruction of the microbes when once in possession, and clinical observation still endorses the conclusion that the fever runs its course in spite of remedies of the antiseptic class. A method of arresting the multiplication and activity of the bacilli is suggested by the mode in which the termination of the attack is effected. The cessation of a fever is not brought about by exhaustion of the pabulum on which the bacillus thrives, but by the accumulation in the blood and tissues of some product of its action upon their constituents which arrests its further activity, and apparently protects the organism from future attacks of the disease, just as the alcohol produced by fermentation brings the growth of the yeast organism to an end. Possibly an anti-toxin may be obtained which, injected under the skin, may anticipate the termination due to the formation of such a substance in the system. This, which is different from the introduction of a protective alexin producing immunity from invasion by the bacillus, has not yet been done, however, in typhoid fever, though apparently diphtheria has been in some measure brought under control by such a method. But recognition of the fact that no antiseptic has yet been shown to be capable of destroying the bacteria in the blood does not carry the implication that antiseptics have no place in the treatment of typhoid fever. Ptomaines are not only produced in the blood, but in the intestinal canal, whence they are absorbed into the blood. And there are here other microbes at work besides the typhoid bacillus. The exudation from the inflamed Peyer's patches and from the intestinal catarrh affords a pabulum for various septic agents, and their ptomaines are added to the typhoid poison proper. Apparently some of the products of intestinal sepsis are even more deadly than the primary disease. It is one thing to follow the typhoid bacillus into the blood; it is quite another to deal with septic processes taking place in the intestinal canal, and there can be no doubt as to the benefit rendered by antiseptics employed for this purpose. A great variety of substances belonging to this class have been recommended and employed: carbolic acid, sulpho-carbolates, β-naphthol, salol, chlorine, hypochloric acid, iodine, boracic acid, and borates. I have tried most if not all of them with good result, but I have come to rely almost exclusively on mercurial preparations, which I have found to be of very great service when administered for certain definite purposes and in obedience to definite indications.

One of the effects of septic processes in the contents of the intestine is diarrhœa, the character of which may be recognised by the offensive and sometimes putrid smell of the evacuations, differing from that of the typhoid stools, strictly speaking. The colour is often dark and not unfrequently the consistence is watery with brown particles or flakes in

suspension, quite unlike the pea-soup typhoid stools. The abdomen at the same time is often distended with gas, and the temperature may be considerably raised by absorption of septic products. Diarrhœa caused in this way is most frequent early in the disease and is most common in patients who have indulged in alcohol or in excess of food. It may also be due to continued consumption of solid food after the fever has set in. The treatment I have found most efficacious in diarrhœa due to sepsis of the intestinal contents is the administration of perchloride of mercury, which I have usually given in doses of one drachm of the solution with one grain of quinine every three or four hours for twenty-four or forty-eight hours. Calomel in repeated small doses of one-third of a grain every three or four hours is equally effectual; the diarrhœa has almost always, in my experience, been checked, the abdomen subsiding and the temperature falling one or two degrees. The entire aspect of the case is usually changed. So favourable has the effect of the perchloride been that I have often been induced to continue its administration in small doses of half a drachm three times a day through a great part of the fever. A common practice in Germany is to initiate the treatment of a case of typhoid fever by two or three grains of calomel on two successive days. Without going so far as to recommend this, I think it would prevent diarrhœa such as I have just described, and at the outset of the attack a single dose would probably be beneficial in most cases. During the first few days of the disease, when the diagnosis is still in doubt, few patients escape an aperient of some kind; it should in my judgment be a rule of practice not to let this be of an irritant kind; a couple of grains of calomel, alone or with a grain of extract of hyoscyamus, followed if necessary by a mild saline, will clear out the bowels, carrying off both fermentescible material and fermentative organisms without aggravating the catarrh or irritating the inflamed Peyer's patches, and will at the same time disinfect the intestinal tract, while colocynth or compound rhubarb pill or liquorice powder might set up a troublesome diarrhœa. More formidable than local irritation and aggravation of the catarrh of the small intestine are the effects on the nervous system of absorbed products of bacterial action on the intestinal contents. Other bacteria besides the typhoid bacillus may effect an entry into the blood through the lesions in Peyer's patches, but it is the ptomaines formed by their activity in the alimentary canal which constitute the poisons. Sometimes with diarrhœa of the kind just described, with high temperature and tumid abdomen early in the disease, there is either wild, maniacal delirium or great stupor and heaviness. These are cases attended with extreme danger. The good effects of the employment of the perchloride of mercury or calomel are frequently seen in the mitigation of the nervous symptoms as well as in the alleviation of the intestinal irritation. Without fever intestinal ptomaines may give rise to headache, languor, stupor, and even coma, which disappear with the clearing out and disinfection of the alimentary canal; and in the course of typhoid fever much graver symptoms of the same kind may appear. They are entirely foreign to the normal course of the disease as usually observed, and are obviously due to some other poison than that produced by the typhoid bacillus.

I have previously related a striking example of this complication. Some years ago I was called by Dr. Ford Anderson to a young man in the second week of an illness of obscure character. A diagnosis of acute tuberculosis had been made by a physician previously consulted, but Dr. Ford Anderson considered the disease to be enteric fever, and the aspect of the patient was characteristic. The temperature, however, was low, the pulse so small and weak as to be scarcely perceptible, and the circulation in the extremities so languid that the hands and feet were greatly swollen, cold, and livid. The sounds of the heart were scarcely audible. The intellect was clear, but the weakness and prostration were such that it was a painful effort to answer any question, and the patient remonstrated against examination and could scarcely be induced to say anything except "I am so tired." There had been nothing in the course of the attack to explain the extreme depression of the nervous and cardio-vascular systems, and it could only be attributed to the action of some poison, the most probable source of which was intestinal sepsis. The abdomen was soft and supple, and there was no tenderness in the right inguinal region; the intestinal lesions, therefore, were apparently not of a serious character and might be disregarded in the presence of the emergency. It was resolved to clear out and disinfect the intestinal canal, and three grains of calomel were given at once and repeated next day. The asthenia was at once relieved, and the case resolved itself into a mild form of typhoid fever, which pursued uninterruptedly a favourable course.

Extreme cases such as that just related are very rare, but instances in which there is oppression of the nervous system, which is not accounted for by the temperature and is out of proportion to the severity of the symptoms generally, are not uncommon. When this conclusion is established by careful investigation it may be inferred that the symptoms are due to some poison, and I have many times seen stupor and muscular tremor remarkably relieved, and the entire aspect of the case changed, by one, or two, or three grains of calomel. There are certain rare cases of typhoid fever characterised from a very early period of the disease by frequent vomiting of small quantities of bilious fluid. The temperature ranges low, the pulse is weak, and the abdomen almost normal in appearance and feel. Such cases usually terminate fatally in the course of the second week by asthenia. Here, again, it has appeared to me that the depressing agent was an intestinal ptomaine, and calomel has been of great service.

Coming now to the intestinal lesions, their severity and extent may usually be judged of by the degree of tenderness over the right iliac fossa and the distension of the abdomen, taken together with the amount and character of the diarrhœa. When diarrhœa is at all excessive the first thing to be done is to ascertain whether it is excited by the food. Strong beef-tea in some patients appears to irritate the gastro-intestinal mucous membrane, and to hurry through the whole length of the bowel. A more common food cause is undigested milk. Diarrhœa so caused has already been considered. Another cause of diarrhœa—sepsis of intestinal contents—has also been considered. When these two sources of intestinal irritation have been eliminated it is surprising how few cases remain in which there is diarrhœa of such amount as to require control. We accept three motions a day and rather prefer to have this number unless the quantity is excessive or the patient very weak. When interference is called for, either by the frequency or the copiousness of the stools, the best remedy is a starch and opium enema; or, when the action of the bowels is frequent and irritable, but scanty, starch alone, by its soothing action, is often sufficient. I have not for years had to prescribe astringents by the mouth, and I should strongly deprecate the employment of catechu or other drugs of this class. Bismuth and opium, with or without aromatic chalk powder, or acid and opium, would be the remedies I should choose were any required. Abdominal tenderness may be relieved by a light poultice or by opiate fomentations. In some cases there is a tendency to constipation throughout the fever. In the early stages I should not hesitate to give a small dose of calomel followed by a mild saline, which sometimes corrects the tendency, or one or two drachms of castor oil. Should the constipation persist, a small enema may be administered every second morning. These cases are often tedious and protracted and difficult to deal with, and there is a greater liability to relapse. In the course of the fever more or less distension of the abdomen very commonly supervenes. This is partly, but not altogether, an effect of the inflammation of Peyer's patches and of the intestinal mucous membrane through paresis of the muscular coats. When accompanied by decided local tenderness and general tension it may be looked upon as due to the intestinal lesions, and it may be treated, according to associated general conditions, by cold water compresses—i.e., a single layer of thin flannel, linen, or calico kept wet with water at any temperature thought best, or made cold by particles of ice, or, as just said, by opiate fomentations or a light poultice. But the paresis of intestinal walls which allows of general abdominal distension is not always a direct effect of the lesions in the mucous membrane. It creeps on together with delirium, stupor, muscular tremor, and subsultus tendinum, and, like them, is evidence of failure of nerve power, and the treatment required is the same. Occasionally there is acute tympanites, a quite sudden and extreme distension of the abdomen. It marks extreme nervous prostration and may be accompanied by retention of urine. When it comes on early in the disease it is one of the most fatal prognostic indications and at every period is a sign of great danger. Stimulants avail nothing against it; strychnine hypodermically may be of service, but according to my experience the remedy of greatest value is opium, which to be of any use must be given in considerable doses—half a

drachm of laudanum, repeated in an hour or so, or even one drachm in extreme cases. I have known several lives saved in this way and have never had reason to repent having given a large dose under such circumstances.

One of the most important effects of the intestinal lesion is hæmorrhage. The liability to this complication cannot be said to be proportionate to the pain, distension, and diarrhœa which have attended the attack, though it is more liable to occur when these evidences of intestinal disturbance have been present. Sir William Jenner pointed out with perfect accuracy that hæmorrhage or perforation was to be looked for when the initial headache had been unusually severe and protracted. The ulceration in such cases, even when not particularly extensive, is liable to be deep. Enlargement of the liver is another common antecedent. When it occurs early in the attack—say, at the tenth or twelfth day—it is always attended with serious danger. After the eighteenth day, while a source of anxiety when the amount of blood lost is considerable, it may usher in convalescence, the temperature, which usually falls on the occurrence of copious bleeding, sometimes not rising again. Whenever sloughs or clots are found in the stools a careful look-out should be kept for hæmorrhage. Its occurrence may often be recognised, before blood is passed from the bowel, by pallor of the face, weakness of the pulse, and a rapid drop of the temperature, and the colon may be felt to be full and heavy in the right loin.

The treatment on which I have come to rely is the placing of a large ice-bag over the right iliac fossa, the administration of a full dose of some liquid preparation of opium, and the subcutaneous injection of ergotin. Ten or fifteen minims of turpentine may also be given every three or four hours. The object of the opium is to paralyse the bowel. The blood poured out into the intestinal canal excites peristalsis and the peristalsis in turn tends to prevent the formation of clot on the bleeding surface, which might seal up the vessels. It must, therefore, be arrested; and it is because opium given by the mouth appears to effect this better than morphia hypodermically that this method of administration is preferred. Half a drachm of laudanum, or its equivalent of liquor opii, may be given at once. Opium, again, seems to have a certain sustaining power. Astringents, supposed to act directly on the bleeding vessels, are useless; long before they have traversed the twelve or sixteen feet of bowel to reach the ulcers they will have combined chemically with its contents, and will have expended their power of coagulating blood or astringing tissues. When the medical man lives at a distance from the patient the nurses should be provided with an ice bag, laudanum, and hypodermic pellets of ergotin, and have instructions to employ them immediately on the occurrence of serious hæmorrhage. Great caution must be exercised in administering stimulants. The half-fainting condition affords the best opportunity for the bleeding to cease, and the longer the patient can be kept in this state with safety the greater is the chance of the arrest being final. Perforation of the bowel is almost always fatal, but I have seen at least two cases of recovery in which, from the symptoms at the time and the formation of a dense mass of thickening between the umbilicus and the right iliac fossa, I had no doubt of its occurrence. The one chance for the patient is the administration of a large dose of opium or morphia for the double purpose of minimising the terrible shock which attends perforation and of arresting intestinal peristalsis, and so minimising the extravasation of the contents and affording an opportunity for adhesions. I should not hesitate to inject half a grain of morphia under the skin and give thirty or forty minims of laudanum by the mouth.

We come now to the third great source of danger in typhoid fever: the protracted high temperature. I have already said that I have been led to look upon the proper temperature of the typhoid fever, independent of complications, as due to the ptomaine generated by the bacilli in the blood, and this poison shares with the temperature in the production of the effects on the nervous and muscular systems. Aggravation may be caused by intestinal sepsis and by the absorption of products of inflammation from the Peyer's patches, &c. The high temperature having been long regarded as a deadly influence, it was natural that the antipyretic class of substances should be hailed as bringing us exactly what we wanted in the treatment of typhoid fever. According to my experience they have not only failed us in this respect, but have done positive harm. They have undoubtedly the effect of relieving the initial headache, but this has appeared to me to be a very delusive benefit. One of Sir William Gull's pregnant sayings was that the removal of symptoms is not the same thing as the relief of disease. The antipyretics not only knock down the temperature, but the patient also—sometimes fatally—and I have often in cases admitted into hospital diagnosed not only the disease but the remedy. My conclusions are based entirely upon observation, but it has interested me to learn that Roque and Weill have found out that antipyrin arrests the elimination of toxines by the urine without preventing their formation. Quinine has done good in large doses as against high temperature, but its benefits have often been dearly purchased at the expense of vomiting, noises in the ears, deafness, and confusion. The most efficacious means of controlling the heat of fever, however, is the application of water to the surface of the body. Tepid or cold sponging is part of the recognised duty of the nurse, and is practised night and morning even in the mildest cases. Where the temperature ranges high the sponging should be done more frequently, and it is well to time it so as to anticipate the rise which usually takes place at a certain period of the day, which will be pointed out by the chart. In such cases it will be useful to supplement the sponging by a continuous wet compress over the abdomen, frequently renewed or moistened, or kept cold by fragments of ice distributed over it. While, however, sponging, the wet compress, the ice bag applied to the head, and similar measures are useful and grateful, they fail to exercise the desired control over the temperature when the fever is at all severe. A resource of greater power is the bath, and it must be said that wherever this has been systematically tried the mortality of typhoid fever has been considerably reduced. The diminution in the death-rate was particularly conspicuous in the hands of Brand, who systematised the bath treatment. It fell from 25 per cent. to 9 per cent. Professor Tripier of Lyons has had equally favourable results, and the latest statistics which have come under my notice, those of Professor Osler in the Johns Hopkins Hospital, are entirely confirmatory. Dr. Cayley, again, has borne emphatic testimony to the value of bathing, and my own experience while physician to the London Fever Hospital, and in the occasional employment of the bath in consultation practice since that time, has convinced me that it saves life. The good results of the bath treatment have long been known to the profession in this country, but it has not come at all into general use. The principal reason, no doubt, is that the cold bathing is usually very distressing to the patient, that the labour involved is great, and that in the general hospitals it is difficult to make the special provision required and to supply the additional number of nurses. There has not, moreover, been the same contrast between the results with and without bathing in this country as abroad, because our mortality was not so high. Brand's system is to place the patient in water at 70° or 65° for twenty minutes every three hours so long as the temperature in the rectum rises in the intervals to 102·5°, cold water being at the same time applied to the head. The patient is dried immediately or only after an interval, according to the effect of the bath on the temperature and according to the strength of the patient, and he is very lightly covered. On the Continent, as I have understood, the patient gets into and out of the bath himself, and no harm seems to come of this; here and in America he is lifted carefully in and out, which adds enormously to the trouble, and at the London Fever Hospital the process was often rendered less disagreeable to the patient by cooling down the bath gradually from 90° or 85° to 70° or 65°.

I will not occupy your time by describing in detail the immediate effects of the bath; the general result is a mortality of 7 per cent. as compared with an average of 15 or 20 per cent. My own conclusion was that the disease ran a somewhat protracted course and that relapses were more frequent. Professor Osler's experience appears to have been similar as regards relapses. I will not detain you by discussing the explanations given of the good results of the bath treatment, but it is an interesting, and to me a new, fact that cold bathing is found to promote the elimination of toxines by the urine. Only one observation I would make, which is that the bath acts not only by abstracting heat, but by the impression made on the nervous system, and in hyperpyrexia the shock of sudden immersion in ice-cold water or of violent affusion with ice water is the more important action of the two, and is, indeed, essential to the effect.

The latest development of the bath treatment of typhoid fever, destined, as it seems to me, to supersede all other, is

the continuous bath which has been employed for several years with remarkable success by Dr. Barr of Liverpool. I have watched his records with great interest, and was so greatly impressed by the results that before appearing here I determined to see for myself the methods by which they were obtained. I paid a visit, therefore, to the Northern Hospital at Liverpool, where I was shown cases under treatment and had the opportunity of examining the apparatus employed. This consists of what Dr. Barr calls a tank—a magnified bath with perpendicular sides raised on short legs. The size is important, not only as allowing the patient plenty of room, but because a considerable volume of water is the more easily maintained at an equable temperature. The usual temperature is 95°, but it may be lower when the fever is high and does not yield, 90° being the lowest which Dr. Barr has found necessary in ordinary circumstances. In hyperpyrexia the bath may be emptied, and cold or iced water dashed or run over the patient. The patient reclines on an Ilkley couch framework, over which is stretched a loosely woven material which easily allows of the passage of the water through its meshes. In the newest form of the apparatus the patient can be raised on his couch completely out of the water by means of a pulley arrangement. A thermometer floats on the water, by a glance at which the nurse sees what its temperature is, and when necessary she adds hot or cold water, as may be required. At first this was done by buckets, and any excess was removed, or the tank was emptied by means of a syphon; but now the hot and cold water are supplied by pipes, and a large exit pipe four inches in diameter passes from the middle of the floor of the tank immediately under the nates of the patient. The shoulders are supported by an air cushion, upon which, again, rests another small, ring-shaped air cushion for the head, and the body is covered by a thin blanket which is brought over the chest up to the neck, as it is difficult to keep the upper part of the chest under water, and the blanket keeps it warm and moist; over the tank is a waterproof sheet. The patient is not necessarily taken out of the tank when the bowels act or the bladder is emptied. Advantage is taken of his removal when the tank is cleansed, once in the twenty-four hours, to obtain an action of the bowels if possible, but at other times the evacuations are passed into the water. The provision made for minimising the contamination is that under the nates there is a circular aperture in the webbing on which the patient rests, and immediately below is the large exit pipe by means of which the water receiving the stools can be run off at once before they are diffused in the bath; a considerable depth of water under the patient is consequently necessary. It would be easy to adapt to the margin of the aperture a flexible funnel communicating with the exit pipe, which would still further diminish the liability to contamination. The three patients I saw under tank treatment appeared to be perfectly comfortable; the skin of the hands and feet was white and corrugated, as is seen in washerwomen, but elsewhere the integument had a natural appearance. The tongue invariably becomes moist within twenty-four hours, and any abdominal distension present is said to subside and delirium and tremor to quickly yield.

Dr. Barr has furnished me with complete statistics of typhoid fever treated by him. These would be out of place here. The general result is that out of 180 cases, 43 of which had the continuous bath, seven patients died, not quite 4 per cent., and two deaths could not fairly be attributed to the fever.

There is no reason to suppose that the typhoid fever of Liverpool is of a less severe type than elsewhere, and the number of cases is sufficient to establish a *primâ facie* conclusion as to the results; and if there is a method of treatment by which the mortality of typhoid fever can be reduced to 2 or 3 per cent. the only question which remains for us is whether it is generally applicable. In my judgment there is no doubt as to this. I have had some experience in the ordinary bath treatment, and it appears to me that the trouble involved in the continuous bathing is much less. I hope, therefore, that a tank-room will soon be provided at every hospital, and I see no reason why a portable tank should not be constructed, provided with means of renewing and removing the water, and with all other requisite appliances, which might be kept at the different nursing establishments, to be sent out to private houses with nurses trained in their use. It should be added that Dr. Barr reserves the continuous bath for the more severe cases, but the principle of continuous abstraction of heat by water is carried out in all. The abdomen is covered by a wet compress, which is frequently moistened, and only a single thin blanket is allowed as bed-clothing. The extremities, however, may have extra covering, and may be kept warm by hot bottles, if necessary. Having analysed, so to speak, typhoid fever into the factors which enter into its symptomatology, and considered the methods by which the different processes making for the injury of the patient and tending to his destruction may be counteracted, I may conclude by bringing them together again, as they are likely to arise in the course of a case, giving briefly the treatment. The patient will, of course, be put on liquid nourishment, the amount and kind of which and the time of its administration will be clearly indicated. There will probably be a few days in which the diagnosis will be uncertain, during which it may seem that an aperient is called for. Let this take the form of one or two grains of calomel, followed by a mild saline such as phosphate or sulphate of soda. The resulting motion and every other stool which the patient passes should be carefully inspected. Should there be severe headache, not relieved by cold to the head, ten or fifteen grains of phenacetin may be given at night once or twice perhaps. As soon as the diagnosis is formed, cold or tepid sponging will be ordered, or, rather, seeing the excellent results of this practice in the hands of Dr. Barr, a wet apron would be applied to the abdomen and kept moist instead of reserving it for special indications, the bed covering being extremely light. In no case should an eiderdown or other impervious coverlet be permitted. If the maximum temperature in the twenty-four hours does not exceed 102° or 102·5° F. no other treatment will be needed; but even then unremitting vigilance must be exercised to the last day of the disease, a report of food, drink, sleep, evacuations, temperature, &c., being submitted by the nurse at each visit. When due care is exercised it is not likely that diarrhœa will be induced by undigested milk or improper food. Should it occur and be attributed to intestinal sepsis liquor hydrargyri perchloridi with quinine or fractional doses of calomel would be given, and this failing to check the undue frequency of the action of the bowels, a starch-and-opium enema would be administered after each loose motion. With a higher temperature cold wet applications would be employed more assiduously and more extensively, and liquor hydrargyri perchloridi (half a drachm to one drachm), or one-third of a grain of calomel might be given with one or two grains of quinine, especially if the temperature rose suddenly or pursued an erratic course suggestive of intestinal sepsis, and this whether there were septic diarrhœa or not, the effects, of course, being carefully watched. Supposing the temperature to defy ordinary measures and to remain at or near 105° in spite of the wet sheet, ice compresses over the abdomen, the ice cap, &c., affusions of ice-cold water would be necessary or a large enema of iced water might be administered. This is on the understanding that the tank treatment is not available, and that the difficulties attending the employment of the cold bath prevent recourse to it. When Dr. Barr's tanks can be had, the continuous bath will be preferred in all cases in which the temperature reaches 103°. Sleeplessness would be alleviated by ten or fifteen minims of liquor morphinæ bimeconatis. As the disease advanced, if the pulse became frequent, soft, and short, brandy would be given, beginning with two to four drachms every three or four hours, the amount would be increased if the tongue were dry, and especially if the tongue and lips were tremulous and the hands unsteady. Should sudden failure of strength occur, as may happen at any period of the disease, brandy would be administered freely, and ether and strychnine, the latter especially, would be injected subcutaneously. Exhaustion towards the end of a long and severe attack would be counteracted by similar expedients, together with the assiduous administration of concentrated liquid nourishment in small quantities. The patient may sometimes be carried through a period of extreme and almost hopeless danger by unremitting employment of one after another of these resources. Symptoms of oppression of the nervous system not obviously due to exhaustion by protracted high temperature, particularly any tendency to heavy stupor, with small, weak pulse, would be an indication for the administration of two or three grains of calomel, unless the intestinal lesion appeared to be severe, in which case hæmorrhage might result. On the sudden supervention of tympanites half a drachm or so of laudanum or liquor opii would be given. Complications would be dealt with as they arose—hæmorrhage by means of some liquid preparation of opium or morphia to arrest peristalsis, by an ice-bag over the right iliac fossa, and by the subcutaneous injection of ergotin

to tighten up the arteries and diminish the systolic output of the left ventricle. In case of perforation a large dose of opium together with morphia injected subcutaneously would offer a patient the only chance.

I have now brought my address to a conclusion, and have to thank you for your patient attention. If I have in any measure succeeded in my attempt to render more clear the part played by the various morbid actions which contribute to the symptomatology of typhoid fever, and have thus made it more easy to deal with dangers as they arise or to anticipate and prevent some of them, I shall not unworthily have occupied your time and my own.

THE BACILLUS OF BUBONIC PLAGUE.[1]

BY PROFESSOR S. KITASATO.

[PRELIMINARY NOTICE.]

EARLY this year an epidemic of bubonic plague broke out in the south of China and Canton, from which city the disease was imported into the neighbouring island of Hong-Kong, where it has prevailed from the beginning of May until now. The Imperial Japanese Government sent a commission to Hong-Kong in order to study the plague, especially as regarded its bacteriological character and its pathological and clinical features. The pathology and medicine were the special study of Professor Aoyama, and the bacteriological part received the care of the writer. Having left Japan on June 5th, 1894, we arrived at Hong-Kong on the 12th of the same month. Here Dr. Lowson, Acting Superintendent of the Government Civil Hospital, put everything needful at our disposal in the most friendly spirit. A room in the Kennedy Town Hospital (one of the plague establishments) was given to us, and there we began our work on June 14th. On that day we were able to see a post-mortem examination performed by Professor Aoyama. I found numerous bacilli in the bubo (in this case a swelling of the inguinal glands), in the blood of the heart, in the lungs, liver, spleen, &c. As the post-mortem examination was made eleven hours after death I still had doubts about the true significance of what I found; I therefore made a cultivation and inoculated a mouse from a small piece of the spleen. On the same day I took, with all due precautions, some blood from the finger tips of a patient who had the disease in a very bad form, with a temperature of 40·5° C., swelling of the axillary glands, &c. Under the microscope I found bacilli with capsules, the poles of which were stained much deeper with aniline dyes than the middle part; this gave them a great likeness to the bacilli of chicken cholera (bacillus choleræ gallinarum). On the next day all the serum cultivations which were prepared in the incubator from the different organs of the body and of blood from the finger tips showed a growth of microorganisms, which, under the microscope, were not to be distinguished from those which we found in the blood and in the interior of the bubo at the first post-mortem examination. The bacilli differed only by being a little longer and staining more easily in the middle than those taken from the blood. With these cultivations I inoculated subcutaneously mice, guinea-pigs, rabbits, and pigeons. The mice, which were inoculated on the first day with a piece of spleen and some blood from the finger tips, died in two days' time, and at the post-mortem examination upon them I found œdema round the place of inoculation, and the same bacilli in the blood, in the internal organs, and in the œdematous part around the place of inoculation. All animals which had been inoculated with the cultivations (pigeons excepted) died after periods extending from one to four days, according to the size of the animal. The same state of the organs after death and the same bacteriological observations always obtained as in the case of the mice previously referred to. I propose to give further details about my experiments on animals at a later time. Every day I took blood from many plague patients and examined it, and almost every time I found the bacilli as above described, sometimes in great numbers, sometimes only few in number, so that many glass slides had to be examined to find good specimens. On the other hand, these same bacilli were to be found at every post-mortem examination (of which we had upwards of fifteen) in great quantity in the bubonic swellings, in the spleen, the lungs, the liver, in the blood contained in the heart, in the brain, intestines—in fact, in all internal organs without exception—and every cultivation from any particle of these parts invariably produced the same bacilli. Suppose the contents of a bubo or a small piece of the spleen are rubbed on the cover-glass, and the latter, after having been stained, is examined under the microscope (one-twelfth inch oil immersion, Zeiss) bacilli will be discovered in the form found in pure cultivation (Reinkultur). In the spleen especially the bacilli are aggregated in heaps. Bacilli from bubonic swellings and from other internal organs are more easily stained with aniline dyes in their middle part than those taken from the blood, but any serum cultivation prepared from them produces the same form of bacillus. In any case where cultivations are prepared from parts of any internal organs or from the blood taken from the finger tips, with careful observation of all due precautions, pure cultivations (Reinkultur) of one and the same bacillus are always obtained; therefore the most intimate connexion must exist between the bacillus and the disease. Full particulars about the observations at the post mortem examinations will be given later by my colleague Professor Aoyama; generally it may be said that the parts in the neighbourhood of the bubo were œdematous, of a colour between black and red, infiltrated with gelatinous exudation, and that the spleen was enlarged. Both phenomena are to be found in inoculated animals in which the parts round the place of inoculation present the same œdematous exudations as are found in human beings.

I will now give a few short notes about the bacillus. The bacilli are to be found in the blood, in the buboes, in the spleen, and in all other internal organs of the victims of plague. The bacilli are rods with rounded ends, which are readily stained by the ordinary aniline dyes, the poles being stained darker than the middle part, especially in blood preparations, and presenting a capsule sometimes well marked, sometimes indistinct. The bacilli found in the spleen are best stained by a solution of methyl blue. I am at present unable to say whether or no "Gram's double-staining method" can be employed. I shall report upon this on a future occasion. The bacilli show very little movement, and those grown in the incubator, in beef-tea, make the medium somewhat cloudy. The growth of the bacilli is strongest on blood serum at the normal temperature of the human body (34° C.): under these conditions they develop luxuriantly and are moist in consistence and of a yellowish grey colour; they do not liquefy the serum. On agar-agar jelly (the best is good glycerine agar) they also grow freely. The different colonies are of a whitish-grey colour and by a reflected light have a bluish appearance; under the microscope they appear moist and in rounded patches with uneven edges—at first they appear everywhere as if piled up with "glass-wool," later as if having dense, large centres. If a cover-glass preparation is made from a cultivation on agar-agar, and, after having been stained, is observed under the microscope long threads of bacilli are seen, which might, by careless inspection, be mistaken for a coccus chain, but are recognised with certainty as "threads of bacilli" under closer observation. The growth on agar-gelatine is similar to that on agar-agar; in a puncture cultivation at the ordinary temperature after a few days they are found growing as a fine dust in little points alongside the puncture, but with very little growth on the surface. Whether these bacilli are able to liquefy ordinary gelatine or not I am at present unable to decide, as the temperature of Hong-Kong ranges so high that the employment of simple nutritive gelatine is out of the question. I shall give further information on this question later. On potatoes at a temperature of from 28° to 30° C. there was no growth after ten days' observation, but at a temperature of 37° C. the bacilli developed sparingly after a few days; they were whitish grey in colour and exsiccated. As mentioned before the bacilli grow best at a temperature of from 36° C. to 39° C.; at how low a temperature growth is possible I am unable at present to state. So far I have been unable to observe the formation of spores.

Experiments on animals.—Mice, rats, guinea-pigs, and rabbits are susceptible to inoculation. If these animals are inoculated with pure cultivations, or with the blood of a plague patient in which the bacilli have been observed, or with the contents of a bubo, or with pieces of internal organs, or even with the contents of the intestine, they begin to

[1] In connexion with this paper, for forwarding which to us we have to thank Dr. James A. Lowson, of Hong-Kong, our readers are referred to the illustrations of the bacillus which were published in THE LANCET of August 11th, 1894.

become ill in from one to two days, according to the size of the animal. Their eyes become watery, they begin to show disinclination for any effort, later they avoid their food, and hide quietly in a corner of the cage. The temperature rises to 41·5° C., and with convulsive symptoms they die in from two to five days. I must observe that in Hong-Kong I could only obtain small guinea-pigs (weight from 100 to 150 grammes) and small rabbits (from 200 to 250 grammes). If I could have experimented upon larger animals it is possible that life would have been prolonged somewhat beyond the periods mentioned above. The parts around the point of inoculation are infiltrated with a reddish gelatinous exudation, the spleen is enlarged, sometimes there is a swelling of the lymphatic glands, and in all the organs the bacilli are found. The results found after death in animals are very similar to those found in anthrax and in œdema malignum. Pigeons do not appear to be susceptible to the influence of bacilli. I made experiments by feeding some mice and guinea-pigs with pure cultivations of the bacillus and with small pieces of the internal organs: the result was such animals perished in a few days under the same symptoms as those which had been inoculated. In all the internal organs of animals so destroyed I found the bacilli. With the dust of dwelling-houses from which the plague-stricken had been removed I made several experiments upon animals. Some of the animals died from tetanus. In one case only a guinea-pig died with plague symptoms, and in this animal the same bacilli were found in the internal organs as in those of plague patients who had succumbed. These experiments with the dust from infected houses I shall certainly continue. Many rats and mice at present die spontaneously in Hong-Kong. I examined some of them. In the internal organs of a mouse I discovered the same bacilli.

POWER OF RESISTANCE OF THE BACILLI TO PHYSICAL AND CHEMICAL AGENCIES.

Experiments with desiccation.—The contents of a bubo in which the bacilli were present in great numbers were wiped over cover-glasses (perfectly cleansed by heat and alcohol), and some of these cover-glasses were dried in the air of a room at a temperature ranging from 28° to 30° C. Others I exposed directly to the sun's rays, and from among them, after an exposure of from one, two, and three hours up to six days, I removed some parts, putting such portions in beef-tea and placing them in the incubator. Those which had been standing in the room from one to thirty-six hours showed a pretty good growth in the incubator, but those which had been in the room for more than four days were unable to show any growth even after one week's incubation. Those exposed directly to the sun were all destroyed after from three to four hours. Further cultivations on serum were treated exactly like the contents of the bubo with very similar results.

Experiments with heat.—Beef-tea cultivations which had been heated for thirty minutes in a water bath up to 80° C. were destroyed; at 100° C. in the vapour apparatus they were destroyed in a few minutes.

Chemicals.—Carbolic acid: To every 10 cubic centimetres of beef-tea cultivations, which had been standing in the incubator for from two to three days and had grown well, carbolic acid was added of a strength of ½ per cent. of the whole, ¾ per cent., and 1 per cent. They were afterwards well shaken, and left at the ordinary temperature of the room. Of each of these cultivations a few drops were brought into sterilised beef-tea after one, two, and three hours and left in the incubator, with the following results. Those cultivations which contained ½ per cent. and ¾ per cent. carbolic acid and had been left standing in the room for one hour, grew in the incubator after two days. A cultivation, however, of 1 per cent which had been left standing for only one hour did not grow even after one whole week in the incubator. Cultivations that had been mixed with only ½ per cent. of carbolic acid and had been left standing for more than two hours did not show growth after one week in the incubator, neither did the other cultivations containing a greater percentage produce any growth. Quicklime: Experiments were made with quicklime in exactly the same way as with carbolic acid, with the following results. Those beef-tea cultivations which contained ½ per cent. of quicklime grew sparingly after two hours; those containing 1 per cent. of quicklime ceased to grow. Cultivations which had been mixed for more than three hours, even if containing only ½ per cent. of quicklime, showed no growth. Further experiments with chemicals should have been made, but as my time was extremely limited I had to leave them to a future time.

The following is a short review of the Plague generally. History shows us that plague epidemics existed in the fourteenth century both in Asia and Europe, and thousands of human beings perished. Since then from time to time, now here, now there, an epidemic has appeared, and until lately the disease almost seemed to have vanished from the face of the earth. This, however, was not so. In China it has existed to this day, especially in Yun Nan, where it occurs every year in an endemic form. From the latter place it was imported to Canton, and from Canton for the first known time it has reached Hong-Kong. The recent outbreak has given us opportunity for studying this disease—a cause of mystery for centuries—with the means which modern science places in our hand. The principal symptoms of the disease now ravaging Hong-Kong are the following. After the period of incubation, which lasts from three to five days (possibly a little longer, and some medical men say as long as eight days), the patient complains of high fever and swelling of one or more of the lymphatic glands (buboes). These swellings may antedate, coincide with, or follow the rise in temperature, and are accompanied by severe pain. The gland most commonly affected is one of the femoral chain; next an inguinal, next axillary, and sometimes a cervical gland is affected. The tongue is coated with a greyish-white or dark brown heavy fur. There is commonly headache, also delirium, the heart is generally affected, and occasionally vomiting and diarrhœa are present (not frequently the two last conditions, which are generally forerunners to a fatal issue). In patients who survive the onset of the disease the temperature does not fall until a week has passed, and convalescence is a slow process. Sex and age make no difference in the disease—men and women, infants and old people, are attacked equally. If in such a case as described the blood be examined the before-described bacilli in greater or lesser numbers will be found present. (In thirty patients I obtained twenty-five positive results, and two of my subjects which were without bacilli were subsequently proved not to be suffering from the plague at all.) As indicated before, it is not always an easy matter to demonstrate the presence of the bacilli directly in the blood of many patients—they are present sometimes in such small numerical strength that only after examining several slides can they be discovered. In order to be safe, not only must the blood of a suspected plague patient be examined, but a cultivation should also be made. In the buboes the bacilli always occur in the form of pure cultivations, but it is obviously not always easy to procure a specimen of bubo contents from the living subject. The question arises, Is it possible to make a diagnosis of bubonic plague from examination of the blood of the suspect? In many cases, Yes. But a good deal of bacteriological practice is required, or such diagnosis is impossible. It is a well-known fact that so far, amongst infectious diseases produced by bacilli, only two micro-organisms have been found in human blood—viz., the bacillus of anthrax and the spirochæta of relapsing fever (we do not include the plasmodia of malaria). Here in the blood of human beings suffering from bubonic plague we have a new bacillus possessing the following qualities: (1) this bacillus occurs in the blood, in buboes, and in the internal organs of the plague-stricken only; (2) this bacillus is not to be found in any other infectious disease; (3) with this bacillus it is possible to produce in animals the identical symptoms which the disease presents in human beings. From this evidence we must come to the conclusion that this bacillus is the cause of the disease known as the bubonic plague; therefore the bubonic plague is an infectious disease produced by a specific bacillus. What are the channels by which these bacilli enter the human body? We may suppose that they have three principal channels of entrance: by respiration, through an external wound, and by the intestinal tract. Examples of the first two ways, of which I shall speak later, are abundant. Examples of the last-mentioned way are not positive so far; but, considering that we discovered the bacilli in the intestinal canal and experiments on animals prove that feeding alone produces definite results, the concession must be made that the third is a possible method of infection. Most of the cases of bubonic plague occur amongst the Chinese, a few other nationalities excepted. Whoever has looked into a Chinese dwelling in Taipingshan is at once persuaded that here is a suitable hunting ground

for the plague bacillus. The houses are so filthy that they are unfit for human habitation. What means are to be employed against the plague?—preventive measures, general hygiene, good drainage, perfect water-supply, cleanliness in dwelling-houses, and cleanliness in the streets. As soon as an epidemic breaks out the sick must be perfectly isolated. The infected dwellings, before the household things are removed, have to be disinfected by a 2 per cent. carbolic acid solution or by a solution of quicklime in a correct way. Afterwards, wearing apparel, linen, bedding, &c. should be specially disinfected by a steam disinfector for one hour at a temperature of 100° C.; should a steam disinfector not be available the things ought to be exposed directly to the sun's rays for several hours. Articles unfit for use ought to be burned. Dwelling-houses thus emptied should be cleansed again with quicklime or carbolic acid. The fæces should be disinfected carefully with quicklime. Dead bodies covered with quicklime are either to be burned or to be buried at least three metres from the surface. Mice and rats which have died spontaneously in dwelling-houses should be carried away with proper precautions. After a patient has apparently recovered he must be kept apart from the healthy community for a period of a month, for during convalescence the bacilli may be discovered in the blood from three to four weeks after all symptoms have ceased. Individuals ought to keep away from plague patients and infected houses, and should be careful about their solid and liquid nourishment. These measures have been generally in force during the epidemic in Hong-Kong. The question as to whether immunity against the bacillus of plague is possible on the lines practised against many other bacillary infectious diseases remains at present an open one. I shall study it thoroughly later and in an exhaustive manner. All that I have described above must be regarded only as a short preliminary notice. The results of extensive study on the subject of the plague bacillus will be published by me at a later time. Before I conclude this notice I beg to tender my heartiest thanks to the Colonial Government of Hong-Kong, to all the medical men here, and especially to Dr. Lowson for his kind assistance.

Hong-Kong, July 7th, 1894.

ON THE

IMPROBABILITY OF A PARASITIC ORIGIN OF MALIGNANT DISEASE.

BY RICHARD BARWELL, F.R.C.S.ENG.,
CONSULTING SURGEON TO CHARING-CROSS HOSPITAL.

IN my last paper on this subject[1] I adduced many cogent facts in the clinico-pathological history of malignancy which are incompatible with the supposition of its parasitic origin. Among these was its incommunicability. Every disease which is known to be due to any form of microbe is contagious, infectious, or epidemic, and possesses at least two, sometimes all three, of these qualities. This holds good not merely of zymotic fevers, but also of such specific diseases as syphilis, tubercle, glanders, leprosy, actinomycosis, and some others.[2] But malignancy, though there may be theoretical reasons for considering that it may be infectious,[3] has, as has been seen, clinically shown itself to be non-infectious and non-inoculable—indeed non-communicable; nor is that negative quality proved merely by clinical experience. Innumerable experiments have, with very few exceptions, shown the intense difficulty—but for these rare exceptions, of which more must be said by-and-bye, I might have said the impossibility—of propagating malignancy from a so diseased person or animal to a healthy one. Some account of these attempts will be given immediately, but the ground must first be cleared of a possible source of fallacy. Even if every attempt at transferring cancer from a diseased subject (human or animal) to a healthy one had succeeded, such success would in no wise prove the existence of a cancer-producing parasite, because a few cells or nuclei from a malignant tumour (having found congenial soil) would be quite as likely to give rise to a carcinoma as any imaginable parasite—indeed, much more likely, for such cells or nuclei would proliferate in that soil and propagate their own species, and that whatever the tissue in which they were deposited might be. But it is inconceivable that a parasite pure and unmixed with tumour-elements, emanating, for instance, from an epithelioma and deposited in a region void of epithelial cells should by its irritation produce there a neoplasm consisting of that particular sort of cell. Whence could the parentage of such cells be derived? Therefore, though success would prove little or nothing, a very large percentage of failures must go far to prove the non-existence of a cancer-producing microbe, because it is not conceivable that such a being could find so many victims, human and animal—in other words, could, unaided, so readily penetrate living tissues, and yet, when artificially introduced in hundreds of different ways, should persistently refuse to survive and to follow out its life-history. That is, it is inconceivable unless one imagines that only an immature form of the parasite, which cannot be produced within the animal body,[4] is the only form of the problematical microbe that can infect.

The experiments referred to, which have been practised more or less for at least a hundred years, but of late have been carried on with great perseverance and frequency, take principally five forms: (1) from a diseased human being to a healthy one; (2) from a diseased part to a healthy part of the same subject; (3) from disease in the human subject to an animal; (4) from a diseased animal to a healthy one of the same species; and (5) from a diseased animal to a healthy one of a different species. The mode of experimentation, especially in the last three classes, has been varied in every imaginable manner—as to the animals chosen, the method of attempted infection, the state and kind of material introduced, the sort and condition of receptive tissue, &c.—the most important variant, as eliminating a large element of failure, being the introduction of asepsis.

1. It is self-evident that, if inoculation of a healthy person from a malignant tumour has been proved to be entirely harmless, repetition of the experiment is useless; if it has not been so proved it is unjustifiable. Nevertheless in 1808 Alibert inoculated with the succus from a mammary cancer three students of the Hôpital St. Louis, and about a week later he inoculated Dr. Biet and himself. Dr. Biet suffered from a pretty sharp attack of lymphangitis (septic inoculation); all the other subjects suffered little or nothing.

2. Auto-inoculation and grafting of cancerous nodules from one part to another of a patient's body has a large percentage of success, as would be expected from observation of the methods by which malignant tumours infiltrate and spread, from the existence of contact and especially of continuity nodules; the meaning of these easy successes will be explained hereafter.

3. Inoculation and transplantation of cancer from man to one of the lower animals has never been successful. Dr. L. Pfeiffer, indeed, states[5] that he took from a woman aged twenty-eight, suffering from secondary cancerous tumours and cachexia, a small portion of carcinoma and transplanted it into a mouse at the root of the tail; that this mouse developed a melanoma, from which he transplanted minute pieces into twelve other mice; and that of these one developed a like cancer. This statement must be left to take care of itself; had it been reliable it would have changed the whole aspect of the question and certainly would have excited much comment and imitation. Other experimenters have for a time imagined that they have achieved success, for the implanted piece has not only survived, but has increased, or has appeared to do so, then has stopped its growth, has diminished, and disappeared[6]—i.e., has been absorbed. Mr. Shattock (Morton Lecture) likens these grafts to the Hunterian implanting of a tooth in a cock's comb—that is probably a just comparison; but the human tooth was not absorbed.

4. This class of attempts—viz., inoculation or transplantation from animal to animal of the same species—has had a certain number of successes, a number which can be counted on the fingers of one hand, while the failures are almost innumerable. The cases to be reckoned as successful (and even some of these are not entirely free from doubt) are five. They are as follows. 1. Klenche's[7] inoculation of a horse from a

[1] THE LANCET, July 28th, 1894.

[2] In his Morton Lecture Sir J. Paget is reported to have said of the above diseases: "Virchow classes them with the granulomata." This is, however, only a part of Virchow's nomenclature; he really calls them "infectious granulomata." The omission of this very important adjective is, of course, due to typographical inaccuracy.

[3] See Morton Lecture by Mr. Shattock, THE LANCET, May 19th, 1894.

[4] Metchnikoff's theory, to be referred to hereafter.

[5] Die Protozoen als Krankheitserreger; second edition, p. 204.

[6] I do not propose to quote all the examples I have collected; they certainly do not exhaust the list, for many hundreds of such experiments have been published, and doubtless as many, just because they have been resultless, have not been made known.

[7] Archives de Médecine, 7ème Série, tome xv., p. 433.

melanotic tumour of a mare, which produced a local tumour. 2. Goujon[8] implanted a fragment of epithelioma from one guinea-pig to another. After fourteen days there was a local nodule with nodules on all viscera (doubtful on account of short lapse of time). 3. Novinsky,[9] from a medullary cancer on the nose of a dog, made twenty-seven inoculations in inflamed and fifteen in normal skin. All were resultless but one of the latter series. The animal being killed four months afterwards, it was found that it had a nodule an inch and one-third thick at the scar, and swollen lymphatic glands, said to have the structure of original tumour. 4. Wehr-Lemberg[10] showed a dog with nodules produced by inoculation of a medullary cancer from dog to dog. Although these up to that time had increased in size they were afterwards all absorbed, but at the next Congress he related the result of another inoculation of a dog in four places on the abdomen. After six months the animal died. At the spots of inoculation large tumours were found; the whole of the lymphatics on the sacrum and at the loins were infiltrated with sarcoma. A photogram of this animal was published in a German medical paper.[11] 5. Hanau,[12] from a cancer of a rat, introduced a small piece by way of the tunica vaginalis into the peritoneum of two presumably healthy old rats. One of these, killed after eight weeks, had two little nodules; the other died in seven weeks with cancer of the peritoneum and specially of the omentum. From one of the tumours of the first-described animal he infected another old rat, which, after three months, was killed, and the whole abdomen was found to be filled with cancer. An engraving showing this condition was published by Mr. Shattock,[13] who also showed a photograph of the rat at the last Morton Lecture.[14] That gentleman has—I think, successfully—defended this result against the doubts thrown upon it by Duplay and Cazin,[15] who made fifty-four similar experiments, also on rats, but without any result.

5. Inoculation from an animal to another of a different species is much like the attempt to transfer malignancy from man to one of the lower animals—the results have been without exception negative.

I have postponed to the last remarks on such experiments as transplanting a portion of cancer into an unaffected part of the same individual. Five such experiments have come to my knowledge. One only of these was followed by no formation of tumour,[16] one is due to Hahn,[17] one to von Bergmann,[18] and two are reported by Cornil, who suppresses the surgeon's name. After amputating a cancerous mamma he transplanted small pieces into the other breast.[19] These last four implantations were all followed by the production of a carcinoma.[20] This series of easy successes is strictly and closely comparable with the not uncommon diffusion of cancer nodules over the peritoneum in cases of visceral malignancy and go far to prove that the infection takes place by simple proliferation of the transferred cancer cells and not by the irritation of a problematical indwelling microbe. Comparison and contrast of these last examples with the few successes and many failures of all other inoculation experiments prove, however, more than this. The same procedure which in one particular class of experiments has proved successful four times out of five has in other classes hardly any result at all; the difference, then, lies not in the mode of introduction or in the material introduced, but in the condition of the animal experimented on. That is to say that the very presence of malignancy in any person's or animal's body is a clear indication that his fluids and tissues are fitted—perhaps constitutionally, perhaps by some chemico-vital change—for the reception and maintenance of such neoplasm. Hence morsels, cells, or nuclei from a carcinoma, say, of an abdominal viscus, shred off and scattered about the peritoneal surface, readily take root and survive; but the same things introduced into the peritoneum of animals not in that peculiar receptive state—witness MM. Duplay and Cazin's fifty-four rats—simply perish—fall victims probably to phagocytosic activity and produce nothing.[21] There still, however, remains to the upholders of the parasite theory another way of accounting for the non-communicability of cancer and for the failure of inoculation experiments—namely, the hypothesis of Metchnikoff[22] that the problematical parasite of cancer might perhaps only be able to sporulate outside the body, or at least could only *in externâ* assume that particular form and condition in which it is able to manifest its infecting qualities. There are in the life-history of several parasites, especially of the intestines, conditions analogous to this, and the idea was adopted and repeated by Mr. Shattock in the last Morton Lecture. But if the cancer-producing parasite be acknowledged, and if a necessary metamorphosis of the creature outside the body become an accepted doctrine, how does it fit in with all those characteristics which Sir J. Paget, Mr. Ballance, Mr. Shattock, and many others have promulgated as proofs of the parasitic nature of malignancy? The involvement of lymphatic glands, the production of secondary nodules, the infection of opposite parts by prolonged contact, the scattering of cancer-nodules over the peritoneum in visceral carcinoma, and all those other phenomena so carefully collated as "Presumptive Evidence in favour of the Parasitic Nature of Cancer"[23]—all these could not possibly be produced by a parasite which had to go outside the body to acquire infectious potency. For instance, a primary cancer of the mamma is followed by malignant enlargement of an axillary gland. The parasite theory of cancer avers that this secondary enlargement is produced by transference, from the primary tumour to the gland, of a cancer-producing sporozoon; but if the parasite, in order to be infecting, requires a period of existence outside the body it cannot infect the gland after having merely travelled along a lymphatic duct; if, on the other hand, it does after this short journey infect the gland it does not require an outside existence. It might be objected that a parasite which had not gone through metamorphic phases outside the body would not infect the gland if carried to it bare and naked, but must reach its destination in a cell or nucleus; but such cell or nucleus is, as I have shown in my first paper,[24] quite able of itself to infect; therefore, where would the *raison d'être*, the evidence or proof, of a parasite come in? Such outside existence, too, is somewhat hard to believe in the face of such cultivation experiments as those of Mr. Ballance and Mr. Shattock. Normal tissues, as also lipoma, myxoma, sarcoma and scirrhus, were incubated on nutrient materials for periods varying from one to thirty days and remained sterile; no change in them whatever occurred, and nothing upon the nutrient material indicated any production of protozoic life. Quite lately, however, these gentlemen have introduced morsels of the diseased tissues, of course with all proper precautions, into sand moistened with weak infusions of beef,[25] and found certain moving amœbæ which they supposed might perhaps be the young form of the cancer parasite outside the body. The proof will be difficult, but, if produced, *cadit quæstio*. It cannot, however, be forgotten that M. Darrier four years ago placed morsels of Paget's disease on sand previously moistened with a nutrient fluid. In due time there appeared amœboid forms held to be derived in direct line from the parasites which Darrier and Wickham thought they had found in the diseased tissues. Now these bodies have been proved not to be protozoa at all.

(To be continued.)

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[8] Thèse de Paris, 1889.
[9] Centralblatt für Medicinische Wissenschaften, xiv., p. 790, 1876.
[10] Seventeenth Surgical Congress, April 6th, 1888.
[11] Archiv für Klinische Chirurgie, 1889, vol. xxxix.
[12] Fortschritte der Medicin, Bd. vii., p. 321.
[13] Brit. Med. Jour.
[14] This exhibit is not mentioned in the abstract published by THE LANCET.
[15] La Semaine Médicale, 1893, No. 42.
[16] Fenn: Bactériologie Chirurgicale, No. 890, p. 296.
[17] Berliner Klinische Wochenschrift, 1888, No. 21.
[18] Die gegenwärtigen Forschungen über den Ursprung des Krebses.
[19] Académie de Médecine, June 28th, 1891.
[20] I purposely omit Reincke's case, of which much has been made by some writers. Paracentesis abdominis was performed on a woman with cancer of the peritoneum. Carcinoma, which developed in the skin wound, was by some ascribed to a parasite adhering to the trocar and deposited on the edge of the wound. To me it seems clear that one of the many malignant peritoneal nodules was punctured by the instrument, and it simply extended along the passage made for it.
[21] MM. Duplay and Cazin consider that Hanau's rats were already cancerous before they were inoculated, and, indeed, it is possible that the very minute percental successes may have been due to the above condition of the animals experimented on.
[22] Annales de l'Institut de Pasteur, 1892, p. 158.
[23] Transactions of the Pathological Society, vol. xxxviii., p. 412 et seq.
[24] THE LANCET, July 28th, 1894.
[25] The Morton Lecture, THE LANCET, May 19th, 1894.

PRESENTATION TO A MEDICAL MAN.—Mr. Slader of Gainsborough has been recently the recipient of a handsome marble clock bearing the following inscription, which explains the circumstance of the presentation: "Presented to Dr. Slader on his marriage by the members of the Gainsborough Working Men's Club and Institute, July 24th, 1894."

FOREIGN BODIES IN THE STOMACH; GASTROTOMY; DEATH.

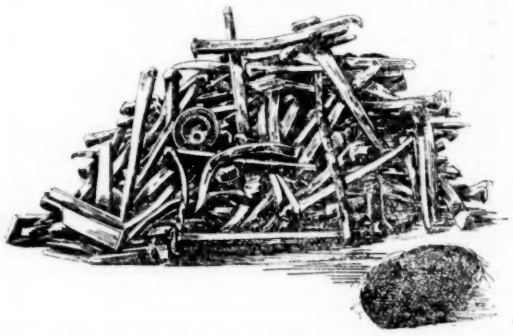
BY JAMES F. GEMMEL, M.B., C.M.GLASG.

A MAN forty-three years of age, suffering from chronic mania, and who had been an inmate of the County Asylum, Lancaster, for seventeen years, was on June 18th observed by an attendant to be very pale and evidently seriously ill. He was at once taken to the hospital ward, to which he walked without any indication of uneasiness or pain, undressed himself, and got into bed. So far as one could make out from his rambling statements, it appeared he had swallowed some nails on the previous day between breakfast and dinner-time. On inquiry it was ascertained that he had taken his food as usual on that day, but had little or no breakfast on the following morning. The patient looked pale, but did not appear to be in any great pain (only laying his hand across his stomach when asked if he had any pain), and made repeated and ineffectual attempts to vomit. The abdominal walls were not unduly resistant. To the left of the middle line, in the epigastric region, there was a lump, so far as one could judge, about the size of a duck's egg—heavy, irregular, and movable to a certain extent to one side or other of the middle line, according to the position of the patient, and which on palpation communicated to the hand a sensation of fremitus. A rough and, as afterwards turned out, very inadequate estimate was made of the probable weight of the mass by getting the patient to remain on his hands and knees and placing one's palm in the epigastric and umbilical regions. As a further aid to diagnosis a long pair of œsophageal forceps was passed through a rubber tube into the stomach, but failed to extract any portion of the foreign body. As the tube entered the stomach, however, a dark-coloured and very fetid fluid with a strong ferruginous odour welled up into the mouth, and on withdrawing it the patient attempted to vomit, but could not eject anything. The gravity and urgency of the case were thus apparent, and after a consultation it was decided to operate.

Operation.—The epigastric region was disinfected by a 1 in 20 carbolic solution, and an incision about two inches in length was made in the middle line. The liver presented itself in the wound, and on passing two fingers along the stomach that viscus was found to be occupied in its cardiac end by a heavy, irregular mass, and several hard, sharp points which had perforated its anterior wall now projected into the peritoneal cavity. An attempt to bring the stomach through the wound failed, owing probably to the great weight of its contents; the incision was therefore enlarged in a downward direction, and after some little difficulty the pyloric portion was drawn out and fastened to the abdominal wound by two loops of strong carbolised catgut. The part was thoroughly cleansed by a 1 in 2000 perchloride of mercury solution, and all round the wound carefully protected by cyanide of mercury gauze. The stomach was then opened by a small incision, and the fluid contents, consisting of a dark-coloured liquid with a strong ferruginous odour, were allowed to escape, the patient, to facilitate this, being tilted over on to his right side. The gastric wound was then enlarged sufficiently to admit the fore and middle fingers, when the stomach was found to be occupied by a mass of rusty nails, many of them nearly three inches in length, and some very sharp, bent, and twisted. Their removal, therefore, which was effected entirely by the two fingers, was very tedious, as many of them could only be extracted one at a time. When about half the mass had been removed, a piece of matted hair, nearly two inches in length, was withdrawn from the lower end of the œsophagus, from which it was projecting into the stomach. There were removed, in all, 192 nails (the majority being two and a half inches in length, and many even longer), half a screw nail, a piece of brass wire, a carpet tack, several small pieces of stick, a button, and the mass of hair already mentioned. (See figure.) The whole weighed 1 lb. 9½ oz. The wound in the stomach was then sutured with carbolised catgut, the parts being thoroughly flushed with warm mercurial solution; the abdominal wound was closed and covered by a thick pad of cyanide gauze. The patient was then put to bed between warm blankets and given a quarter of a grain of morphia hypodermically, followed by one-sixth of a grain a couple of hours afterwards, as he was so restless. Stimulants per rectum were also administered, but he gradually sank and died four hours after the operation, which had lasted nearly two hours. Chloroform was the anæsthetic used.

Post-mortem examination (twelve hours after death).—The œsophagus was found to be healthy. The stomach presented the operative incision in the pyloric region, contained about an ounce of the dark-coloured ferruginous-smelling fluid, and had its mucous lining covered by a darkly coloured glairy mucus. It contained no foreign body. The mucous coat was in some cases denuded almost in its whole thickness and was much lacerated, some of the lacerations being over half an inch in length and extending into the muscular coat. No perforations could be found, and there was no attempt at healing of the gastric wound. The intestines were somewhat distended; the contents were scanty, semi-fluid, and very dark in colour—melænic-like. This condition was probably caused by the chemical action of the rusty nails and the hæmorrhage from the wounded coat of the stomach. In the contents also were found several pieces of wood, but no nails. The peritoneal cavity contained a small quantity of dark-coloured fluid. The membrane itself was somewhat injected. In the meshes of the large omentum a nail about one inch in length and two small splinters of wood were found, and they must have escaped through the incision in the stomach, as no visible perforation could be detected.

Remarks.—Gastrotomy, a word which at first indicated an incision through the abdominal walls for the surgical treatment of various affections of the contained viscera—namely, strangulation, rupture of uterus, &c.—is now only employed to indicate opening the stomach for the removal of foreign bodies from that viscus and the lower portion of the gullet, or for simple stenosis of the pyloric orifice. I shall not



enter into statistics, but content myself by saying that the operation may be considered as a very successful one. That the stomach is capable of containing, without any marked pain or other symptom, even large foreign bodies, and for considerable periods, is well known, the post-mortem records of our large asylums furnishing curious and notable examples. It may also be said that, excluding gun-shot injuries and accidental swallowing, most cases of foreign bodies in the stomach occur in the insane. As just indicated, they are often only discovered after death, but how long they have remained in the viscus is, in some cases at least, quite impossible to determine, there being practically no symptoms during life. Of the class of substances likely to be attended with little apparent discomfort, and which may also remain for long periods, may just be mentioned hair, string, spoons, &c. Such being the case, it is perhaps only natural, when even the presence of a foreign body has been determined, to adopt the expectant plan of treatment. When, however, the foreign body is sharp and likely to perforate, or when a number have been swallowed and form a mass unable to be passed through the intestinal canal, the aspect of the case becomes quite altered, because sooner or later a fatal result may be apprehended. In this case the foreign bodies were numerous and sharp-pointed, and they formed a mass which could be got rid of by no muscular effort, but would simply lie in the stomach till its component parts ulcerated through into the peritoneal cavity; consequently immediate operative interference was necessary. The median line was selected for incision in preference to the usual method because (1) the patient was insane and his story might not have been

correct, and therefore the foreign body might have been of a vastly different nature to what was expected; (2) one would be better prepared to deal with any unforeseen difficulty; and (3) the gullet and pylorus would be more easy of access did they lodge any foreign bodies. As it happened, an oval mass of hair was extracted from the œsophagus, having probably been expelled from the stomach in the attempts to vomit. One peculiar circumstance in the case was the intact condition of the mucous membrane of the œsophagus. That the entire mass had not been in the stomach more than twenty-four hours and had been swallowed, as the patient said, between breakfast and dinner-time on the previous day may be inferred from the following. 1. Such a mass, and one of such a nature, could only remain for a short time without producing obvious signs and symptoms. 2. Though expulsion by vomiting was, I think, impossible, still, as the mass was movable, it was quite within the range of probability that when the patient lay on his right side one or two of the smallest of the nails might have escaped through the pyloric orifice into the small intestine. Had this occurred they would have been detected at the post-mortem examination. 3. The two small pieces of wood found in the small intestine were hardly sufficient to cause obstruction and would probably have passed with the first movement of the bowels; and there was no evidence to show that the patient suffered from constipation—in fact, rather the contrary. The entire post-mortem examination has not been mentioned, only that portion bearing directly on the case being detailed. The extraction of the last portion of the nails had to be done very hurriedly, owing to the state of the patient, and it is possible that the nail and two splinters of wood found in the omentum escaped then. I have shortly sketched a most extraordinary case, which may, perhaps, prove of some little interest; and, though the unfavourable result is to be regretted, still operation afforded the patient his only chance of life. For valuable assistance at the operation I am much indebted to my colleague, Dr. C. G. Cassidy.

County Asylum, Lancaster.

REMARKS ON THE PHYSIOLOGY AND PATHOLOGY OF BLOOD PRESSURE.

BY HARRY CAMPBELL, M.D. LOND.

THE blood in passing through the arteries, capillaries, and veins meets with resistance, and the ventricle has to communicate to it sufficient "driving energy"—as it may conveniently be termed—to overcome this resistance, to force the blood into the large veins, whence probably it is sucked into the heart. The driving energy thus communicated exerts itself both (1) in a forward direction, causing the blood to move onwards, and (2) laterally against the vessel wall, giving rise to vascular tension—arterial, capillary, and venous. Let it be carefully noticed that the driving energy by no means necessarily expends itself equally in these two directions. Pressure on a fluid at rest is exerted, it is well known, equally in all directions; but when such pressure, or, as it is now agreed to term it, driving energy, is exerted on a fluid free to flow in tubes, this is by no means the case. If there is little or no impediment to forward movement, it may be wholly, or almost wholly, spent in the forward direction. Thus, if in an elastic tube, through which water is being driven with considerable force, an aperture be made near the outlet, which I will suppose to offer the minimum of resistance, it can readily be shown, by noticing the height to which the water escapes through this aperture, that the lateral pressure at this spot is practically *nil*; and that force communicated to a fluid free to flow may, for some time at least, expend itself wholly, or almost wholly, in a forward direction, and not at all, or scarcely at all, laterally, is shown by observing the manner in which a fluid behaves after it has been ejected from a conical outlet. It is manifest that the lateral energy of the fluid constituting the jet must be infinitesimal, for otherwise the latter would immediately after its exit from the orifice expand to considerable dimensions; whence it follows that, if such a jet were driven through a short straight tube of exactly the same calibre as itself, the lateral pressure on the tube would likewise be infinitesimal.

So much for the flow of fluids in tubes when there is little resistance to forward movement. When, on the other hand, this resistance is considerable, the fluid approaches in its behaviour to that of a static fluid, the driving energy expending itself more equally in all directions; that is to say, the lateral pressure becomes much greater than it was before, while the forward energy (though it remains greater than the lateral) becomes much less. This can readily be shown by partly blocking the outlet in the experiment just mentioned, when the water escaping through the aperture in the wall of the tube will at once rise to a considerable height.

How is one to account for this varying distribution of the driving energy in the forward and lateral directions? That force imparted to a fluid free to move along a tube should, when there is very little resistance to the flow, tend to expend itself chiefly in the direction of the axis of the tube appears to me to follow from the first law of motion. This is obviously the case with a jet of fluid forced from a conical outlet, as also with such a jet passing along a tube as described, and it would not be difficult to show, did space permit, that it is also largely the case with fluids flowing in bent and branching tubes.

In order to have a clear conception of the behaviour of liquids flowing in tubes, in respect of distribution of forward and lateral energy, it is necessary to remember that liquids are made up of a number of molecules which glide freely over one another. Let it be supposed that, instead of infinitesimal molecules, one has to do with a number of smooth ivory balls. If these be driven along a straight tube open at one end, their driving energy will, of course, be spent almost wholly in the forward direction, according to the first law of motion, and there will be very little lateral pressure; if, however, the outlet be partially blocked, so as to interfere with the free forward movement, the driving energy will now be in large part distributed in the lateral direction, owing to the lateral dislocation of the balls. The cause of this lateral dislocation is not far to seek, and may be explained on the principle of the wedge. Suppose three of the ivory balls to be arranged as in Fig. 1, and that an equal force is acting upon each

FIG. 1.

FIG. 2.

In each case the direction of the blood current is, of course, upwards.

of them in the forward direction and driving them along a straight elastic tube: it is evident that, if no impediment exist in front, they will all three move forward according to the first law of motion—i.e., they will retain their relative positions, thus exerting no pressure laterally. If, however, there be any impediment in front, it is clear that the central ball will tend to be driven in between the other two, thus thrusting these further apart, after the fashion of a wedge, and forcing them against the walls of the tube, which will in consequence be distended. (Fig. 2.) Thus forward energy will be partly converted into lateral. Or, to take a more homely illustration, I will suppose a number of persons to be passing along a straight passage—say the entrance to the pit of a theatre. If there is no impediment ahead, they will be able to pass freely onwards, and there will be little or no pressure against the sides of the passage; but if such impediment exists (as it very often does), and each person as he enters the passage endeavours to push his way onwards, the same lateral dislocation will take place as in the case just referred to, and considerable pressure will be exerted against the walls of the passage.

These considerations make it clear why contraction of the arterioles should, by increasing resistance,[1] cause a transference of forward into lateral energy, so that at one and the same time arterial tension rises and less blood passes into the veins; and why, on the other hand, dilatation of the arterioles should, by diminishing resistance, lead to a lowering of tension and an increased flow into the veins. It was for some time a difficulty with me to account for the influence of arterial constriction and dilatation on blood pressure, and it is because my difficulty may occur to others that I here refer to it. I imagined, and indeed taught, that arterial constriction sent up the blood pressure by compelling the heart to beat more powerfully, and

[1] The mode in which such contraction of the arterioles increases resistance has been treated of by me in a previous paper.

vice versâ; but, though it is certain that the force of the heart beat may be modified coördinately with modifications of peripheral resistance, rising and falling with this latter, the modifications in arterial pressure which follow modifications in peripheral resistance may, theoretically at all events, take place quite independently of variations in the force of the heart beat, as is evident from the foregoing considerations. This fact, though set forth in the physiological text-books, is not sufficiently insisted on, for it has, as will be seen, most important pathological applications. Its truth may be demonstrated by a very simple experiment. Place upon a shelf, say 10 ft. high, a reservoir of water such as is used by surgeons in washing out cavities, and allow the water to flow out through a long piece of drainage tubing open at its free end. Let now the tension in the tube be carefully estimated by the fingers. If while this is being done the outlet be suddenly narrowed by compression a shock will be immediately felt, the tube will become distended, and greater compression will now be needed to obliterate the lumen; or if, instead of using the fingers, a water manometer be attached to the side of the tube (the glass tube of a urinometer will answer the purpose admirably), the water will immediately rise on narrowing the outlet. This sudden increase of lateral pressure is manifestly due to the increase in resistance, and to that solely, seeing that the driving force, far from becoming greater, has been steadily diminishing throughout the experiment; in other words, it is due to the conversion of forward into lateral energy. This being so, it is evident that, theoretically at all events, arterial blood pressure may vary very considerably, independently of any modification in the beat of the heart, and it suggests that arterial pressure may be good while the left ventricle is contracting with only moderate force, or, to put it in another way, that good arterial tension does not necessarily imply the normal standard of cardiac strength. Such is found, clinically, to be the case. It frequently happens that arterial tension is comparatively high when the left ventricle is inadequately filling the arteries; the arterioles in such cases contracting, and thus preventing the blood rushing into the veins with dangerous rapidity.

One may conveniently consider cases of this kind under three heads.

1. *Cases in which the left ventricle is itself imperfectly filled, and consequently unable to pass on an adequate supply of blood to the arteries.*—Chronic bronchitis, especially when accompanied by emphysema, affords a familiar instance of this. In chronic phthisis, again, arterial tension may be high. I have often been struck by the frequency with which the radials are thickened in this disorder, and I cannot but think it must be due to long-continued high tension. The radials may be quite large in these cases, and when this happens it must be assumed that the obstruction resides in the arterioles. In this connexion it is of interest to note that the accumulation of carbonic acid in the blood causes arterial constriction. Now such accumulation is practically always associated with imperfect filling of the left ventricle, owing to obstruction in the pulmonary circuit. Such is the case in suffocation, strangulation, and lung disease, in all of which it is therefore imperative that what little blood does pass into the systemic arteries should not flow too rapidly into the veins, which already hold far more than their share; wherefore excess of carbonic acid in the blood is generally attended with the danger of empty arteries, and it is not surprising that the action of this substance on the vaso-motor system should be one tending to minimise this danger. Mitral obstruction may be mentioned as another disorder which prevents the proper filling of the left ventricle, and, as Sir Wm. Broadbent has insisted, it is almost always characterised by high tension.

2. *Cases in which the left ventricle is defective in driving power.*—Fatty heart, in which high arterial tension has been observed, affords a striking instance; and scarcely less striking is the high tension of anæmia, in which the driving power of the left ventricle is certainly reduced, and in which fatty degeneration of the heart is not rare. This latter is especially frequent in pernicious anæmia, in which disorder I have seen the temporals markedly tense and tortuous, and that, too, when the patient was almost too weak to sit up in bed. I have observed exactly the same thing in extreme cases of marasmus in children. In typhoid fever, again, in which one is wont to expect very low tension, one may look in vain for it, even when the first sound is inaudible at the base and barely audible or inaudible at the apex, and when, therefore, it must be assumed that the driving power of the left ventricle is defective. It is by no means rare in such cases to find the radials "full between the beats," and I have at this moment under observation two cases of typhoid fever in children presenting the characteristic first sound just described, while the radial tension is good, the temporals are distended and tortuous—in one decidedly so—and the aortic sound quite loud.

3. *Cases in which the imperfect filling of the arteries is due to aortic obstruction.*—Tension may remain high in extreme forms of this disease. Thus in a case in which the orifice was reduced to a mere chink, the radial tension—although occasionally giving way—was well maintained to within a few weeks of death, and it has been experimentally shown that the aorta can be considerably constricted without modifying blood pressure. Doubtless the increased effort of the left ventricle in such cases in part explains this, but it does not, I think, entirely—as Cohnheim would appear to assume.

It is most important, when thinking of the venous circulation, to bear in mind the fact that the driving power communicated to a fluid free to flow in tubes may spend itself wholly, or almost wholly, in carrying the fluid onwards, and little or not at all by lateral pressure. Seeing that the venous pressure is low, one is apt to think of the driving energy of the venous blood as correspondingly low, and to wonder how so slight a pressure can carry on the venous circulation, forgetful of the fact that the driving energy of the venous blood spends itself chiefly in the forward direction. I have endeavoured to estimate the forward energy of the blood, as it flows through a large vein in which the lateral pressure is practically *nil*, by finding what head of pressure is required to drive water through the vein at the rate at which the blood flows through during life, and I find that it is approximately equal to a column of water from two to three feet in height. It is impossible to obtain mathematically accurate results in this way, but the experiment suffices to show that even when the blood in the veins is exerting practically no pressure on the venous wall it may still retain much of the energy communicated to it by the heart.

Devonshire-street, Portland-place, W.

A CASE OF MYXŒDEMA TREATED BY THYROID GLAND.

BY JOHN HAROLD, M.R.C.S., L.R.C.P. LOND.,
MEDICAL REGISTRAR, CHARING-CROSS HOSPITAL.

THE following notes with accompanying illustrations have reference to a case of myxœdema which had failed to respond satisfactorily to the subcutaneous injection of a glycerine extract of the thyroid gland, but which was successfully treated by the oral administration of thyroid tabloids, and which illustrates the marked influence of the thyroid gland on dermic and epidermic structures.

A man fifty-one years of age was admitted into Charing-cross Hospital suffering from myxœdema. There was no history of antecedent depressing influences: there were no hardships, no worry, no injury. He was of temperate habits. The onset of the disease was gradual. He noticed that he was getting stouter, that he was clumsy in handling objects, that his feet were often cold, and that for three or four years he was becoming weaker, and thus unable to follow his employment, which entailed hard work. For many years he had suffered from chilblains, and for three to four years his friends had noticed the marked alteration in his face and in his general aspect. On coming under observation he presented the appearance characteristic of an advanced case of myxœdema. The face was swollen throughout and expressionless, and the eyebrows were very thin and somewhat curiously arched. The nostrils were wide, the nose was flattened, and the alæ nasi were thickened, with obliteration of the naso-labial fold. The hair of the scalp was exceedingly thin and dry, and in many parts the scalp was quite bald. The tongue was enlarged and its movements were slow; the teeth were loose, especially the molars; the gums were spongy and receding, and the lips much increased in size. His skin was of a sallow tint, thickened, harsh and dry, with an absence of sebaceous secretion. There was an entire absence of hair in the axillæ and in the pubic region. Both hands and feet were sensibly enlarged, but not spade-like in appearance; the nails were brittle and grooved and their nutrition was

manifestly defective. There was an absence of skin lesions. His voice was husky; slowness of thought, of speech, and of movement were pronounced, and he appeared to take but little interest in what was going on around him. Awkwardness of gait, with associated incoördination of movement, was readily perceived. The speech was accurate, but slow and thick; vision was normal, but somewhat interfered with owing to the swelling of the eyelids; there was no proptosis. A peculiar bitter taste and disagreeable odours were more or less constant troubles. The thyroid gland could not be detected, and there were no correlated tumefactions in the supra-clavicular regions. He was very sensitive to cold, but had no difficulty in swallowing. He was good tempered and had no illusions or hallucinations. Nothing abnormal was detected in the lungs, heart, or abdominal viscera. The urine was pale in colour, non-albuminous, and non-saccharine. The pulse was slow and weak. The average temperature of 104 observations = 97·8° F. The entire body was swollen and did not pit on pressure.

The treatment first adopted was the subcutaneous injection of a glycerine extract of the thyroid gland into the soft tissues of the back. No improvement following the injections, which were painful and caused abscesses, they were discontinued, and when the abscesses had healed the oral administration of the thyroid gland in the form of tabloids was commenced.

FIG. 1.

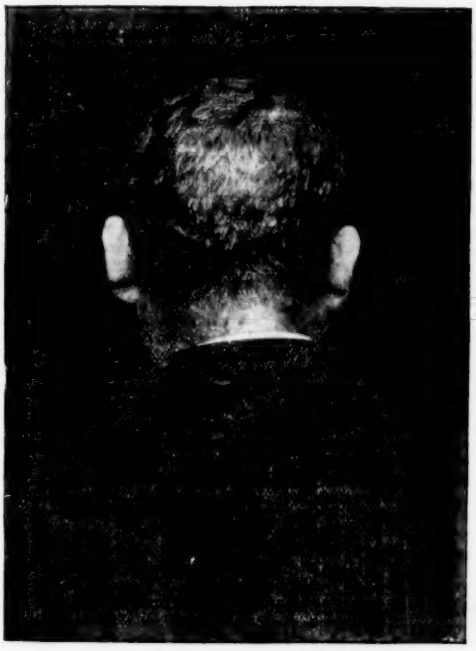
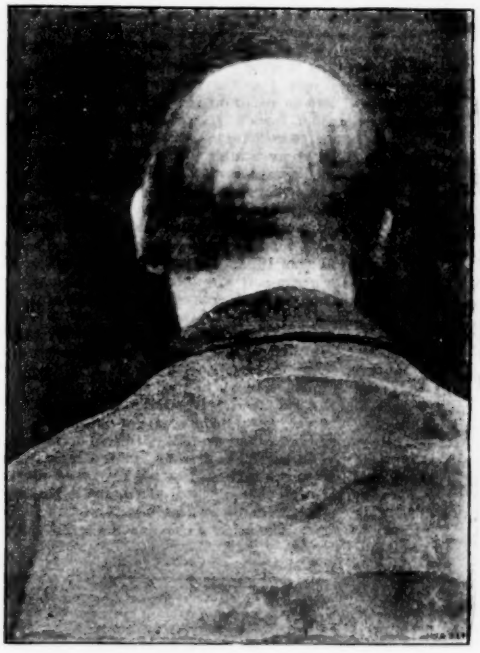


FIG. 2.

FIG. 3.



One to three tabloids (five grains of the dried gland in each) were given daily, the patient being kept in bed throughout the treatment and watch kept for any untoward effects. The tabloid form of administering the thyroid was selected as being reliable and more efficient than some of the powders and glycerine extracts of the gland. Improvement in the condition of the patient was soon manifested. His general appearance underwent a marked change; the abnormal myxœdematous infiltration of the tissues gradually disappeared, his features became unmasked; the skin became soft, less wax-like, and recovered its functions, perspiration of the hands being noted early; there was general desquamation, especially on the hands and feet, and the patient was brighter looking and generally more cheerful. There was a notable loss in weight. He no longer complained of cold or of the symptoms referable to the special senses already alluded to. An abundant growth of fine downy hair on the scalp was evident. The patient frequently mentioned the fact that he felt a peculiar tickling sensation in his throat, and, curiously, he located the site of this trouble over the situation of the thyroid gland. A peculiar mottling of the skin developed on

the forehead. The urine became more abundant, of a higher colour, rich in pigments, and non-albuminous, with a moderately large mucous cloud; the excretion of urea was increased, the phosphoric acid elimination being normal in amount.[1] The hands regained their normal shape and their movements were much less clumsy. The improvement in the mental faculties kept apace with the marked improvement in all his physical actions. The accompanying photographs, for which I gladly acknowledge my indebtedness to my friend Mr. V. A. L. Corbould, illustrate the marked improvement in the condition of the patient. But striking as is the change effected, as shown by the illustrations, nothing but personal acquaintance could convey an idea of the physical and mental improvement which followed the administration of the thyroid gland. This case illustrates the difference between the effects produced by the subcutaneous and oral methods of administering this potent therapeutic agent. No amelioration of the symptoms followed the subcutaneous method, which the patient much objected to and which was attended by undesirable local effects. Marked as are the favourable effects produced by the internal administration of the thyroid gland, it is of great importance to enjoin rest in bed during the course of treatment. The patient is thus kept in hand and any unpleasant effects produced by the remedy are early noted and soon checked. The chief untoward effects to be looked for are neuralgic pains, angina-like seizures, palpitations, depression, giddiness, nausea, and headache. Possibly many of these symptoms are referable to an idiosyncrasy on the part of the patient to the thyroid gland or to the dose administered being too large owing to there still being some functional thyroid gland left to carry on in part its internal secretion: or, perhaps, to stored-up waste products eliminated into the blood. It is therefore wise, especially if the patient be the subject of any cardiac trouble, to be satisfied with moderate initial doses, noting their effect on the temperature and pulse. As *prima facie* the rational treatment of myxœdema ought to be continuous, this patient was examined on July 16th last to ascertain if there was any recurrence of the myxœdema. He practically had discontinued the use of the tabloids since March, 1893. He informed me that he had not been so well for years and was able to follow his employment without any inconvenience whatever, that his appetite was good, his skin had resumed its former colour and now perspired freely, the teeth were no longer loose, and chilly sensations, bitter tastes, and unpleasant odours no longer troubled him. His manner was alert, his locomotion rapid, and his speech quite natural, and he boasted of the luxuriant growth of hair on the head. It was therefore manifest that in this case the degree of improvement obtained under the thyroid treatment was maintained. He still continues under observation, so that, if necessary, the tabloids may be resumed. Now that we know the pathology of myxœdema and its successful treatment by thyroid gland there remain but to know its initial cause and its prodromata.

I have to thank Dr. Mitchell Bruce for kind permission to publish this case.

Harley-street, W.

A CASE OF TRAUMATIC STRICTURE OF THE URETHRA.

BY W. H. BROWN, M.R.C.S.

THE following history seems to me worthy of record as a contribution to the subject of traumatic stricture of the urethra and its treatment. Viewed as such it has the disadvantage of bringing forward but a single case; but, on the other hand, it has the advantage that the case presented special opportunities for complete and accurate report.

A fine, healthy, strongly built man twenty-five years of age was first seen by me on Dec. 11th, 1892. His story was that about 4 P.M. on the previous day, whilst crossing a stile, his foot slipped and he fell astride on the top bar. He was a little bruised, but did not feel much pain, and walked about as usual, but from the time of the fall he was unable to pass any urine. A little blood came from the urethral orifice once or twice. On the morning following the accident he walked up to see my partner, Mr. Foster. The latter attempted to pass a catheter—first a soft rubber one, then an olivary gum elastic one, then a silver one,—but he could not pass a point about four inches from the meatus. A good deal of bleeding took place. There was then some ecchymosis about the scrotum and for about an inch behind it. The bladder was halfway up to the umbilicus, and there was a desire to micturate. The patient was sent home to bed, and at 12.30 P.M. I saw him with Mr. Foster. I verified the above appearances, but did not attempt to pass a catheter. The patient had then passed no urine for twenty hours. We arranged to give him chloroform in an hour's time and to do what might be necessary. But half an hour after we had left him the patient walked to my house and informed me that he had just passed more than a pint of urine, naturally with a little blood, but with scarcely any pain. He was sent home to rest in bed. On the next day (Dec. 12th) he seemed to be well. A spot was noted in the perineum, just behind the scrotum, which was tender and slightly swollen. Pressure on this spot caused a few drops of blood to escape from the urethral orifice. After this the patient seemed to go on well; there was no fever, and only slight pain after micturition. On the 17th it was noted that on two occasions about an egg-cupful of blood had come from the urethra. "Has little pain now; micturates without difficulty." Four days later a hardish swelling about as big as a pigeon's egg, situated just behind the scrotum, "seemed to burst into the tube after his passing urine, and a lot of dirty stuff came away." The next note relating to the case is dated just six months later—viz., June 23rd, 1893—and runs as follows: "The patient did not come for advice or treatment (he was always very frightened of the catheter), but on being met and questioned yesterday he stated that he is having a good deal of trouble with his urine lately. He says he felt nothing unusual for three months after the accident, but since then there has been gradually increasing difficulty. At present he has to micturate rather frequently (five or six times a day, he says), and it takes him some time to void all he can (perhaps five minutes). He is generally up once or twice at night. He says there is barely a continuous stream now, most of the urine coming in little drops. A little urine often dribbles away between times. He says he micturates most successfully on first getting out of bed in the morning." On examination slight hardening and thickening were felt in the course of the urethra in the hinder part of the scrotum. On percussing above the pubes (half an hour after micturition) the dulness was found to extend two or three inches upwards. Next day, the patient being in bed, an attempt was made to pass an instrument. Various kinds were tried in succession, but they all stopped absolutely at a point four inches from the meatus. On June 30th it was noted: "Since last note several attempts have been made to get through the stricture, but not even the finest whalebone bougie could be coaxed through. The urine can only be passed by drops and it dribbles away almost continuously." On this date I performed external urethrotomy according to Mr. Wheelhouse's plan. With a good light, and with the cut edges of the urethra held apart by silk threads, there was not too much difficulty in finding the way into the stricture with a small probe. This was replaced with a little more trouble by a small director, and the very tight stricture was then slit up with a probe-pointed bistoury. With the help of Teale's gorget a No. 10 silver catheter was passed from the meatus urinarius into the bladder and tied in. The following evening, as the patient complained of a little pain, the silver catheter was withdrawn and immediately replaced by a gum elastic one of the same size. On July 4th the catheter was removed. The patient had been keeping quite well. On July 5th an attempt was made to pass the silver catheter; it was unsuccessful, and some bleeding occurred both from the meatus and the perineal wound. Next day, another attempt to pass a catheter having failed, the patient was again put under ether, the perineal wound opened with the finger, and a No. 12 (English) passed the whole length of the urethra into the bladder without much difficulty. It seemed as though the difficulty had arisen through the point of the instrument slipping out of the urethra at the wound and passing into the tissues below it. A No. 12 gum catheter was tied in. On July 12th it was noted: "Two days ago the No. 12 catheter slipped out. Since then, on two occasions a careful and prolonged attempt has been made to get an instrument into the bladder. Soft, coudé, and silver catheters of various sizes were tried, but without success. Free bleeding was easily induced. This morning I saw the patient pass urine; the stream was full and free, better than it ever had been since

[1] Brit. Med. Jour., July, 1893, p. 217.

the accident, he says." No further attempts were made with the catheter, owing mainly to the patient's objection. On Oct. 4th he called (at my request) to show himself. He says that there is absolutely nothing wrong with him; micturition is perfectly normal. On Feb. 16th, 1894, he called again at my request. I found scarcely a trace of hardening in his perineum. He micturated in my presence with perfect freedom and with a full stream. On July 6th I again inquired and found that he still remained perfectly well.

It is interesting to note the time—just six months—which elapsed between the accident and the production of a condition of stricture such as to be no longer bearable; but to me the most striking and surprising fact in the case is that this extremely tight stricture, involving at least half an inch of the length of the urethra, should have been at once and completely cured by its free external division. When I had reluctantly to desist from further attempts to pass an instrument after the operation I felt little doubt that the stricture would recur and the patient be as bad as ever. Yet a year has elapsed, during which time micturition has been perfectly free and normal, though no artificial means were employed to maintain the calibre of the urethra from within a day or two of the divisionof the stricture.

Colac, Victoria.

THE PATHOLOGY AND TREATMENT OF ELECTRIC ACCIDENTS.

BY W. S. HEDLEY, M.D. EDIN.

IF the living body become the path of an electrical current of dangerous magnitude, what are the nature and sequence of the lesions that ensue; and how may death occur? Not on account of its connexion with lightning stroke, nor because of a ghastly interest it may derive from the process of "electrocution," but because of those accidents that occasionally occur in connexion with electric light circuits it is that this question becomes chiefly interesting. It has an obvious practical bearing on the proper treatment to be pursued in attempting the resuscitation of persons injured by such accidents—if, indeed, it be permissible to speak of electrocution as an accident—and to hint at the possibility of reanimation. One of the most useful contributions to a knowledge of this subject is a communication made by M. d'Arsonval in 1887 to the Société de Biologie; and this has recently been followed up by interesting confirmatory evidence. It is considered that the alternating currents of commerce may cause death in either of two ways: (1) by actual lesion or destruction of tissue; and (2) by arrest of respiration, producing asphyxia. In the former class death is actual, and nothing can restore animation; in the latter (including electrocution) death may be, and at first often is, only apparent, recovery still being possible, and even probable, by a timely resort to artificial respiration. The following practical rule is therefore formulated: "Un foudroyé doit être traité comme un noyé." There is a limit, however, to this possibility of recovery. If the elevation of temperature produced by the passage of such currents exceed 45° death ensues, "as Claude Bernard has shown, by coagulation of the muscular fibres of the heart."[1] Should this point have been reached such cases pass into the first category of "mechanical destruction," and are not recoverable; but in accidents of the kind under consideration the contact is generally of short duration, and the tetanic muscular contractions have not generally lasted long enough to induce the fatal elevation of temperature.[2]

It is thus considered that in cases of accidental contact with electric-light wires the condition is generally one of suspended animation—of only apparent death—and that by the timely use of artificial respiration real and actual death can often be averted. In attempting the restoration of persons thus injured those repeated rhythmical tractions on the tongue known as the "Laborde" method for the treatment of asphyxia are advocated. It is the procedure which its originator, in his communication to the Academy of Medicine, called "the physiological treatment of death," and its technique is thus described: "With the thumb and index-finger, either bare or covered by a handkerchief, the tongue is seized by its anterior third, and powerful repeated rhythmical tractions and relaxations are carried out with a frequency of about fifteen to twenty times a minute. In making these tractions it is important to feel that the dragging action affects the *root* of the tongue. If, in attempting to seize the tongue, it is found that the jaws are closed and the teeth clenched, open them by the finger, if possible, or use as a wedge a piece of wood or the handle of a pocket-knife, or anything of the kind that may be at hand."[3]

In illustration of the foregoing points an interesting case of recent occurrence is cited. Its details, as given by two electrical engineers who were eye-witnesses of the occurrence, and who assisted in the efforts at restoration, are as follows. It appears that with the voltmeter registering 4500 volts and an ampèremeter marking 750 milliampères an alternating current was accidentally short-circuited through the body of a man. The point of entrance was the hand, and that of emergence the buttock. The duration of contact was "certainly many minutes." More than half an hour elapsed before artificial respiration was commenced, and during that time the man showed no sign of life. Arm movements were then carried out, without apparent effect; on practising the Laborde procedure, however, respiratory movements soon appeared, and in about two hours the man could speak. In the course of a few days he had quite recovered, excepting from the burns at the points of entry and exit. In such accidents the line of treatment to be pursued is sufficiently obvious. It is imperative that artificial respiration be promptly and patiently carried out. The pathology of the accident, however, seems by no means so simple. It is nearly a century and a half since Priestley, experimenting with Leyden jar discharges, showed that death might result from "electric shock" without structural lesion. Recent experiments, especially in electrocution, have abundantly demonstrated this. Such cases might perhaps come under d'Arsonval's second class, and it is allowable to speculate how far the result might have been averted by a timely resort to artificial respiration. How, then, in the absence of actual destruction of vital structures, may such accidents injure or kill? What part do the lungs, heart, and nervous system respectively play in the morbid process? How far is the process direct, or reflex, or inhibitory? Stimuli applied through the vagus or "almost any afferent nerve" will, by reflex effects through the bulb, influence respiration, and it may probably be accepted that, if the stimulation be very strong, respiratory action may be arrested in inspiratory tetanus. So far as the heart is concerned, the inhibitory action of the vagus will come into play. Ziemssen showed in his "classic" experiments that tetanising induction currents applied to the heart of the dog produced those irregular, arhythmic, fibrillar contractions spoken of as "delirium cordis," "caused by some change in the muscular fibres themselves." Is this change a coagulation by the heat resulting from the tetanic muscular contractions? The further experiments of Ziemssen with currents applied directly to the human heart with only pericardium intervening, as well as the experiments of Ludwig and Hoffa, of Biedermann, MacWilliam, Herbert, and Dixon Mann, are familiar through the text-books of physiology. Such experiments may possibly serve as a guide to ordinary therapeutic work or as a starting-point in the controversy as to the risks of vagus stimulation in such conditions as chloroform narcosis or other intoxications; but they will not tell us how a modern industrial current may injure or kill. Further direct experimentation ought to be taken up from the point where the above-named investigators have left it. Cardiographic and respiratory tracings are wanted to show in sequence of time the nature and extent of the influence on circulation, respiration, and innervation of modern currents under various conditions of contact, strength, direction, and duration.

Brighton.

[1] According to Halliburton, *myosinogen* coagulates at 56°.

[2] M. d'Arsonval points out that the elevation of the central temperature produced by the passage of these strong currents is not due to the "resistance of the body to the passing current, in conformity with the laws of Joule, but to the violent contractions throughout the whole of the muscular system and also to the condition of asphyxia, as Dr. Brown-Séquard has shown."

[3] "If the case be one of drowning, at the beginning of the proceeding, whilst holding the tongue with one hand, pass the index-finger of the other hand to the back of the fauces to induce vomiting, and clear the stomach as far as possible from water, food, &c."

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

INTERMITTENT MONOPLEGIA OF THE RIGHT ARM ASSOCIATED WITH ACUTE BRONCHITIS.

By M. N. BYRN, M.A., L.R.C.P. IREL., &c.

THE occurrence of monoplegia of the arm, lasting only a few hours, which occurs periodically, is, in my experience, of extreme rarity; it may therefore be of interest if I relate the following case.

About twelve months ago I was called upon to attend a woman sixty-four years of age who periodically suffered from an attack of acute bronchitis; in fact, I might call it an acute form of chronic bronchitis. The onset of the acute attack was ushered in by flushed face, difficulty of breathing, a temperature of 101° F., intense frontal headache, well marked over the left orbital region, extending over the left side of the head, and great difficulty of vision of the left eye, which presented congestion of the conjunctiva. Her right arm was powerless, with partial anæsthesia (which on an average during the attacks remained so for three hours). Her cough was very frequent, forced, and troublesome. The points of interest in the above case are the intense frontal headache, extending along the left side of the head, and the monoplegia of the right arm, which, in my opinion, shows that the effort of coughing must have produced congestion of the upper third of the ascending frontal convolution, which, according to the localisation of functions, controls the movement of the arm. The above symptoms always disappeared under ordinary treatment (within three hours) combined with five-grain doses of bromide of potassium.

Norwood-street, Spring-bank, Hull.

NOTES ON TWO CASES OF FETID EMPYEMA, WITH SLOUGHING OF THE MUSCLES ROUND THE WOUND.

By STEPHEN PAGET, M.A. OXON., F.R.C.S. ENG.,
SURGEON TO THE WEST LONDON AND METROPOLITAN HOSPITALS.

THE following cases may be worth publishing, as they are so much alike that they well illustrate this rare form of empyema. In neither of them was there any evidence of communication with the lung.

CASE 1.—A man twenty-five years of age was brought to the Metropolitan Hospital on May 13th, having been ill for a fortnight. He was delirious, sometimes troublesome, sometimes half comatose; the urine was albuminous; the temperature ranged from 101° to 103° F.; the tongue was covered with thick dark crusts; there were signs of fluid in the left pleural cavity. On the 14th he was aspirated, and some thin, purulent, very fetid fluid was drawn off. On the 15th I let out more than a pint of thin, blackish, very fetid fluid, and inserted a large tube. On the 16th he was still delirious, restless or drowsy, passing everything under him; the temperature was 103°; the tongue was dry and black; the muscular tissue round the incision was black and sloughy. On the 17th he was still unconscious; the cavity was washed out frequently. On the 18th he was still delirious, passing everything under him; there was diarrhœa. On this day an abscess below the wound was opened, containing the same blackish fetid pus. Another swelling, lower down, was incised; no pus escaped at the time, but there was a flow of it a day or two later. On the 19th the pleural cavity was dry and free from smell, and the temperature normal; but the patient was no better in himself. There was a large sloughy cavity under the trapezius. On the 21st the temperature rose again, the pulse and respiration began to fail, and he died on the 23rd. The temperature just before death was 106°. The pleural cavity remained perfectly dry and clean. At the necropsy the aorta was found to be atheromatous, the aortic valves incompetent, and the kidneys congested; the right lung was slightly congested, and the left lung was so contracted and bound down by adhesions that it was compressed to one-third of its natural size and was quite airless. The pleural cavity was quite dry and free from smell. One small abscess was still unemptied among the muscles.

CASE 2.—A married woman twenty years of age was admitted to the West London Hospital on July 14th. Two months previously labour had been induced on account of convulsions. Six weeks ago she "caught cold," and from this she dated her present illness. On admission to hospital she had a troublesome cough, with muco-purulent sputa, the temperature varied from 100° to 103° F., and there were signs of fluid in the left pleural cavity. On the 19th some blood-stained fluid was drawn off with a syringe, and on the 24th the aspirator was used, but no fluid was drawn off. On the 29th the temperature rose to 104·2°, and she had profuse diarrhœa and sweating. Mr. Vickers opened the pleura and let out nearly thirty ounces of blackish, very fetid fluid. During the next few days the cavity was frequently washed out, and the lung seemed to be expanding well. The diarrhœa continued, and at times she was delirious. On Aug. 2nd a swelling below the wound was incised, but no pus was found in it. For a few days she seemed better; but on the 7th she was worse again, and there were now signs of pneumonia at the base of the opposite lung, together with increase of the diarrhœa and of the delirium; she began to refuse food, and to pass everything under her. On the 12th a collection of very fetid pus was incised below the angle of the scapula. On the 14th another collection of the same blackish fetid pus was incised below the opening into the pleural cavity. Her condition now began to mend, and she made a good recovery. The only drug that seemed to check the diarrhœa was salol, in twenty-grain doses; enemata of starch and opium had no effect.

Remarks.—The following points seem to be worth noting. 1. There was no evidence, in either case, of communication with the lung; no fetid sputa, no shreds of lung tissue in the discharge, and no air in the pleural cavity. 2. The pus was, in each case, of a very unusual character—thin, blackish, unmixed with flakes or clots of lymph, and horribly fetid or gangrenous. 3. The continued fever, delirium, diarrhœa, and prostration were due to absorption from the secondary abscesses, and to this alone; for in both cases the empyema cavity was soon drained and kept clean by frequent irrigation. In neither case were there rigors, or any pyemic rash, or any swelling of the joints.

Wimpole-street, W.

COMPRESSION OF THE COMMON CAROTID ARTERIES FOR URÆMIC CONVULSIONS.

By VICTOR E. H. LINDESAY, M.B., CH.B. VICT.

ON Aug. 11th I was called to attend a boy four years of age undergoing treatment for acute nephritis. His progress during the previous four days had been apparently good, perspiration having been free, and the dropsical condition gradually diminishing. The boy had, however, fallen suddenly into a condition of extreme drowsiness whilst conversing with his father, and his strange appearance had alarmed the parents, and caused them to send an urgent message for my attendance. When examined the patient was found to be in a state of typical uræmia, and the presence of occasional twitchings of the left hand indicated the imminence of convulsions. In spite of the application of ice to the head, the hypodermic injection of one-eighth of a grain of nitrate of pilocarpine, and the administration of an enema, epileptiform spasms increased, and in a quarter of an hour became general in the muscles of the limbs and face. Whilst the convulsions were at their height it occurred to me that firm compression of the carotids might relieve their intensity. Acting upon the idea, firm pressure with the fingers was applied to the vessels over the sixth cervical tubercle, and in less than a minute a satisfactory result was apparent, the muscles of the legs and upper extremities being first relaxed, shortly followed by those of the face. The pressure was then gradually relaxed, and for three minutes there was no return of the spasms. By degrees, however, they partially returned in the face and right limbs (the patient was now lying on his right side), but the left side remained tranquil. Pressure upon the left carotid almost instantaneously checked and then stopped the movements for a period of five minutes. Six times this cycle of events was repeated, the period of rest

being lengthened from three or four minutes to twenty minutes, until after waiting for three-quarters of an hour without any return of the convulsions after the sixth compression of the vessels, I left the patient with instructions to the father to continue the treatment should the condition recur. The patient was then in a state of coma, but breathing quietly, and the pulse was slow. In this state he remained for eight hours, when he awoke with a start and began to ask his father where he was. He did not again fall asleep for five hours, but wanted to play with his toys, dropping off at length into a sound and natural slumber. His subsequent progress has been very satisfactory. Whether this method of checking convulsions has ever been adopted before, I do not know, as I have been unable to find mention of it in any of the small or large text-books. But it is certainly more simple, and, in this case, quite as effectual, as the administration of chloroform or the other methods advised for the purpose.

West Hill-road, Wandsworth, S.W.

DUCT CARCINOMA OF THE BREAST.

BY W. S. CRAWFORD, B.A. CANTAB., F.R.C.S. EDIN.,
SENIOR ASSISTANT SURGEON, LIVERPOOL CANCER AND SKIN HOSPITAL.

A FAT, unhealthy looking woman fifty years of age came under my care last month. She recently suffered from influenza, and a few years ago was an inmate of an asylum, suffering from a temporary attack of melancholia. She is married and has had three children, the youngest born many years since. Four years ago she was thrown from a trap and bruised the right breast severely. Two years later she first noticed a small lump about the size of a marble in this breast; it grew slowly until a few weeks since, when it increased in size rapidly. It was never painful. On examination the right breast was very fat, and at the upper and inner part close to the sternum presented a prominent rounded swelling; the skin was stretched over it, firmly attached, and exhibited large veins; the nipple was perfectly free—in fact there were two inches of normal breast tissue between it and the tumour, which was firm in consistence. No enlarged glands could be felt in the root of the neck or in the axilla. The breast was removed on July 28th and the axilla cleared out. The tumour was found to be spherical, an inch and a half in diameter, and on section pinkish in colour, with hæmorrhages scattered throughout, suggesting a soft sarcoma with extravasation of blood. Microscopically it is a well-marked example of the duct cancer; the spaces are filled with blood and in some of them there are distinct villous growths. The epithelium is columnar throughout the greater part of the section; in parts the appearance might lead one to suspect that it was a columnar-celled carcinoma from such a situation as the rectum. It corresponds in every particular with the description of tumour described by Cornil and Ranvier, but it is interesting from having been situated at the circumference of the breast, so far away from the position of the larger ducts.

Mount-pleasant, Liverpool.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

TWO CASES OF POPLITEAL ANEURYSM.

(Under the care of Mr. CHRISTOPHER HEATH.)

IT is the opinion of many surgeons that patients suffering from popliteal aneurysm are less frequently seen in our large hospitals than was formerly the case. Certainly the number treated during any one year is comparatively small. The following two cases recorded by Mr. Heath are exceptionally interesting, for in the first the Hunterian method of treatment by ligature, on failure of compression, was followed by reappearance of pulsation, and the patient was cured only after excision of the aneurysmal sac. The explanation of this return of pulsation—that the collateral circulation had become too freely established in consequence of the previous compression of the artery—is probably the correct one. Erichsen points out that this return of pulsation may be met with at varying periods in about two-thirds of the cases, and a slight return of pulsation in the sac has been noticed within twenty-four hours. There is a second group in which the symptom is found about ten days or a fortnight after the operation; and a third in which pulsation reappears in about a month or six weeks after the ligature of the artery. He considers the prognosis to be usually favourable. Our readers may recollect a case of recurrent pulsation in which the ligature applied by Mr. Heath to the superficial femoral in Scarpa's triangle had yielded, and the artery again became pervious. This case was cured by ligation of the femoral in Hunter's canal and illustrates another way in which a recurrent pulsation in a sac may be caused. The second case is remarkable for the appearance of gangrene of the limb more than three weeks after the operation of ligation of the superficial femoral artery in Scarpa's triangle. The usual period for the supervention of gangrene after ligation in this situation is from the third to the tenth day. For the notes of the cases we are indebted to Mr. F. V. Bunch, surgical registrar.

CASE 1.—A man thirty-three years of age noticed a swelling in the right popliteal space six weeks before admission to hospital; his attention was drawn to it by pulsation when he crossed his legs. He was admitted to University College Hospital on Feb. 10th last with an aneurysm in the right popliteal space, which increased the circumference of the limb at its most prominent part by five-eighths of an inch and gave the usual signs of an aneurysm. The man had a loud double aortic murmur, which seemed to be due to valvular disease, as there was a separate mitral systolic murmur. There was also a history of acute rheumatism, but there were no other signs of aortic aneurysm. He gave a history of lead colic and a doubtful history of syphilis. The urine was normal. He was ordered twenty grains of iodide of potassium twice a day, and on the 15th digital compression of the common femoral artery was continued for twelve hours. Hypodermic injections of morphia had to be made at intervals, but the compression did not cause very severe pain. The aneurysm became a little harder during compression, but on releasing the artery pulsation returned as forcibly as before. On the 21st, ether having been administered, Mr. Heath ligatured the superficial femoral artery at the apex of Scarpa's triangle with silk. Pulsation at once ceased in the aneurysm. The limb was encased in a flannel bandage as high as the lower third of the thigh, leaving the toes out. The knee was slightly flexed over a pillow. No hot-water bottles were put into the bed. No pulsation was felt in the aneurysm until Feb. 26th, when it returned slightly. From this date it gradually increased, until on March 8th it was nearly as forcible as before the operation, and the circumference of the limb over it was three-quarters of an inch more than on the left side. The wound healed almost entirely by first intention. On March 10th the leg was fully flexed at the knee and secured in this position by a bandage. This was continued, with slight intermissions, until the 18th, when the pulsation was a little less, but the circumference of the limb was not reduced. On March 23rd the common femoral artery was compressed digitally for six hours. At the end of this time pulsation in the aneurysm was very faint, but it rapidly increased again during the night. On the 29th the aneurysm was compressed with a Signoroni's tourniquet for one hour without much benefit. On the 31st an Esmarch's bandage was applied to the leg below the aneurysm for one hour without any effect on the sac. On April 4th, ether having been administered, Mr. Horsley (who was in charge of the wards in Mr. Heath's absence) made an incision over the aneurysm, ligatured the popliteal artery above and below the sac, and removed the aneurysm. The wound healed by first intention without any complications, and the patient left the hospital on April 27th. He was again seen early in June; the scars were firm and he was walking about without any discomfort. The aneurysm measured two inches in its long diameter; it was sacculated, with a large opening into the artery, which lay on its anterior surface. There was a layer of firm laminated clot lining its wall. At the thickest part this clot measured three-quarters of an inch in thickness. The

blood escaped from the aneurysm during the operation and was therefore not measured.

CASE 2.—A man forty-eight years of age noticed slight pain in the calf of the right leg a week before admission to hospital, and on examination he found a swelling behind the knee. He was admitted to University College Hospital on March 15th last with a large popliteal aneurysm which increased the circumference of the limb at its most prominent part by fully an inch. The radial arteries were a little fibroid, but otherwise the circulatory system was healthy. He gave a history of syphilis contracted twelve years previously. On the 16th ether was administered, and Mr. Heath ligatured the superficial femoral artery at the apex of Scarpa's triangle. Pulsation at once ceased in the aneurysm and in the dorsalis pedis artery, and did not again return in either. The after-treatment was similar to that adopted in the first case. On March 18th the foot was rather cold and the circulation in it slow; hot-water bottles were placed in the bed, and for a few days the circulation improved, but did not become quite satisfactory. The wound was dressed on the eighth day and was found to have healed throughout by first intention. The aneurysm had contracted to a small hard mass and the circumference of the limb over it was only half an inch more than on the opposite side. The circulation in the foot remained defective and therefore the patient was not allowed to sit up out of bed until April 8th, twenty-three days after operation. Four days later the temperature rose to 101° F. and there was pain in the calf of the leg; the circulation in the foot was very slow, but there was no loss of sensation. On the next day the temperature reached 101·6° and sensation was lost in the foot. The outer side of the heel was found to be cold and black, and there were two superficial sloughs on the outer side of the leg. The upper half of the leg was hotter than natural. In the afternoon Mr. Horsley therefore amputated the leg above the femoral condyles. The temperature at once fell and did not again reach 100°. The wound healed almost entirely by first intention and the patient left the hospital on May 15th.

On dissection the collateral circulation was found to be very slightly opened up. The articular branches of the popliteal were not enlarged. The lower half of the leg was more extensively gangrenous than appeared on the surface, the muscles of the calf being pulpy and the areolar tissue infiltrated with dark grumous material. The posterior tibial artery and the peroneal artery (which was large and assisted the anterior tibial in the supply of the dorsum of the foot) were filled with similar material as high as the upper third of the leg. The aneurysm was soft and filled with broken-down clot.

Remarks.—These cases are recorded as somewhat unusual examples of popliteal aneurysm. The recurrence and persistence of pulsation in the first case may possibly be connected with the application of pressure to the main artery prior to the application of the ligature.[1] In the second case the aneurysm was so large and the walls so thin that the main artery was ligatured without delay, and at first all appeared to go well, the occurrence of gangrene of the leg being unusually late in its appearance. A carbolised silk ligature was used in both cases, and in both instances the wounds healed by first intention.

BUCKINGHAMSHIRE GENERAL INFIRMARY, AYLESBURY.

A CASE OF ABDOMINAL ABSCESS, AND ONE OF RADICAL CURE OF HERNIA IN A CHILD.

(Under the care of Mr. WALTER DENDY.)

GALL-STONES on their way to the surface after escaping from the gall-bladder or biliary ducts may take a most erratic course in escaping from the body. It is only necessary to read the account of the complications of gall-stones in Murchison's work on Diseases of the Liver to appreciate this, and a surgeon would not be surprised to find a stone of this kind in an abdominal abscess of obscure origin on the right side. We regret that Mr. Dendy has not included in his report a chemical analysis of the concretion which he found, for without that we think there is reason for doubting his interpretation of the case. At any rate, he has not guarded himself against other explanations. The sex of the patient, the age (sixteen months), and the absence of previous attacks afford some reason for the doubt which will be felt. Only about 2·7 per cent. of recorded cases of gall-stones have been met with in patients under thirty years old. The resemblance which may exist between a small fæcal concretion and a gall-stone is obvious. With regard to Case 2, radical cure for inguinal hernia is not often required at the age of sixteen months, but the difficulty in keeping a truss effectively in position is occasionally so considerable that an operation must be performed. The result of Mr. Dendy's operation was very satisfactory. For the notes of the cases we are indebted to the house surgeon, Mr. C. B. Dale.

CASE 1. *A case of appendicitis; abscess opened; two previous attacks; retained testis; gall-stone discharged in dressings.*—A man twenty-three years of age was admitted into the Buckinghamshire General Infirmary on June 14th, 1893. The patient had had two previous illnesses similar to the present one nineteen months and twelve months ago respectively. Otherwise he had had good health. The bowels had always been regular. At his birth something unusual was noticed with regard to one of his testicles. On June 2nd he was seized while at market with severe pain in the right buttock and with chills. The next morning he went to work, but had to return home. The pain was as before. When seen by his medical man he had the usual signs of general peritonitis; the abdomen was distended, hard, and tympanitic; the legs were drawn up; the pulse was quiet and thready. The temperature was 102° F. He experienced pain first at the umbilicus, then in the right iliac region. There was a lump at the right external abdominal ring which could be reduced upwards, but it was not movable downwards towards the scrotum. The patient was removed to the infirmary at Aylesbury on the evening of June 14th. He was a fair, thin young man, and looked ill. The temperature was 102·8°; the pulse was 120; the bowels had been confined from June 2nd to 9th, and since then the man had suffered from diarrhœa. The abdomen was distended, tympanitic, and hard. Pain and tenderness were referred to the right iliac fossa, where there were much resistance and a sense of tumour, with dulness on percussion; there was no gurgling; the maximum pain and tenderness were at the junction of the outer and middle thirds of a line drawn from the anterior superior iliac spine to the umbilicus. There was an oval tumour at the outer ring which resembled a testicle; the corresponding half of the scrotum was ill developed, small, and empty; the opposite scrotum and testicle were normal. Per rectum an elastic swelling was felt at the back part of the pelvic brim. Bimanual palpitation showed this to be related to the swelling felt in the iliac fossa. Under the influence of chloroform an incision above and parallel to Poupart's ligament was made at the inner end outside the epigastric vessels. The abscess cavity was quickly reached and opened, and about one and a half ounces of foul pus escaped. The finger, cautiously introduced, removed some shreds of necrotic tissue, probably gangrenous appendix. No attempt was made to find the stump or to ligature it. A large drainage-tube was inserted after irrigation and iodoform dusting, and double cyanide gauze was employed for packing and for the dressings. The pain ceased and the patient slept well. A few days after this a small faceted gall-stone was found in the dressings. He made a good recovery and was discharged on Aug. 2nd, 1893, with a small sinus, which soon healed. He has been quite well since and pursues his business without the least inconvenience. The two previous attacks had been regarded as due to hernial strangulation on account of the presence of the retained testis. He was advised at the last occurrence of the pain (twelve months ago) to wear a truss, but he soon tired of it and left it off. The gall-stone was probably the cause of the disease, becoming arrested at the orifice of the vermiform process, leading to pressure on the vessels, thrombus, and finally to gangrene of the appendix. A rectal examination should never be omitted, and examination of the scrotum as a routine practice would be a good rule to carry out in every case in diagnosis of diseases about this region.

CASE 2. *Congenital inguinal hernia in child sixteen months old; radical cure; stitch abscess; result successful.*—A healthy, well-nourished child sixteen months old was admitted on March 22nd, 1893, into the Buckinghamshire General Infirmary from the out-patients' department for a large reducible inguinal hernia (congenital variety) which had resisted all attempts at retention by means of trusses. A

[1] The operation of applying a ligature above and below the aneurysm and then removing the sac is not a very common one, but in this case appears to have given excellent results.

phimosis coexisted. Both testicles were normally placed. He was circumcised on April 15th. On April 24th, under chloroform, the sac was exposed, and was with difficulty isolated, drawn down as far as practicable, and ligatured as high up as possible; another ligature was applied at a lower part, near the scrotum, and the included part was excised. The proximal end retracted and the stump fitted well over the deep surface of the inner ring. The skin edges, after deep chromicised gut sutures to bring the aponeurotic layers together had been applied, were approximated with a number of horsehair sutures; no drainage-tube was used; iodoform collodion was painted over the wound; cyanide gauze dressings were employed. The subsequent course of the case was good, except that, owing to the impossibility of securing asepsis, a stitch abscess occurred; the deep sutures came away at intervals and the wound, which in spite of the suppuration was quite superficial, healed well. The patient was discharged on June 7th, 1893, with a small sinus, which soon healed. The following October his mother brought him to the infirmary. The scar was then firm and healthy, and the inguinal region seemed to be firmly knit, resisting every strain put upon it. The hernia had never bulged. When he cried there was no impulse or tendency to protrusion.

Reviews and Notices of Books.

Our State Hospitals: their Construction, Management, and Organisation. By THOMAS M. DOLAN, M.D., F.R.C.S. Edin. Leicester: John Richardson and Co., Limited. 1894.

THE public mind was much excited in 1867 by the appearance in THE LANCET of a series of reports of a Commission which had been appointed by us to inquire into the condition of workhouse infirmaries. The reports revealed a serious state of matters in regard to the sites and surroundings of these hospitals, their internal management, and their provision for nursing their inmates. Dr. Dolan, in the volume before us, writes: "Since 1868 I have endeavoured to spread the principles laid down by THE LANCET Commissioners, and we cannot too strongly, even at the present day, repeat these principles." His book is full of most interesting and useful information and details concerning the system of State aid exactly calculated to be useful to Poor-law medical officers and Poor-law guardians. We cordially endorse his views regarding the site, construction, and arrangement of workhouse infirmaries. They should be the best obtainable. His remarks on classification show how provision has to be made in separate blocks for infants and children, for parturient women, for acute and chronic disease (mental, medical, and surgical), for infectious diseases, and for the infirm. The volume is illustrated with diagrams of hospitals, indicating the author's views on this point. The Evelina Ward and the Beatrice Ward of St. Luke's Hospital, Halifax, are here represented. When compared with the conditions of suffering children thirty years ago the contrast is very striking. Dr. Dolan has aptly dedicated his book to the Halifax board of guardians in recognition of what they have done, and are doing, towards improving the methods of dealing with the problems of poverty and disease. He pays a deserved compliment to his own guardians, and invites other similar boards throughout the country to follow their enlightened example. The chapter on the Medical Officer should be read by all young medical men. It contains a list of his duties and of his difficulties. It is a serious question which Dr. Dolan asks concerning the qualifications of men possessing merely a purely commercial training for dealing with questions of hospital management and administration. His answer is the only one possible. The book contains some useful hints for avoiding friction and for treating any undue interference. The notes on Dietaries are very elaborate and accurate, and evidently compiled as the result of great experience. Dr. Dolan concludes by pointing out that at the present time guardians have before them the work of eradicating the evil reputation of their predecessors in office. The problem for them now is to consider how to raise the reputation of the State hospitals, so that in genuine sickness it may be regarded as a privilege, and not as a degradation, to enter them.

Dictionary of National Biography. Edited by SIDNEY LEE. Vol. XXXIX. (Morehead—Myles.) London: Smith, Elder & Co. 1894.

THE thirty-ninth and latest volume of the Dictionary of National Biography, at which point it is estimated that the second half of this valuable book of reference commences, contains fewer biographies of medical interest than its immediate predecessors, and no lives of eminent surgeons. All the memorials are of physicians.

Two of these occupy a much more prominent place in the scientific eye than their companions; and of one, Murchison, it is impossible, living so near his time as we do, to predict the exact place that he may be found not only to have occupied in the past but to occupy in the future. Charles Murchison, M.D., LL.D. Edin., F.R.S., was descended from an old Aberdeen family, and was closely connected with the celebrated geologist of this century, Sir Roderick Murchison. He was born in Jamaica in the summer of 1830, and consequently at the time of his decease, in April, 1879, was only in his forty-ninth year. His scholastic career was a record of prizes, and in particular he showed a great taste for botany, having as early as 1848—i.e., two years before either the law or his professional knowledge would allow him to qualify as a physician—published in the proceedings of the Botanical Society of Edinburgh an account of certain glandular structures found on the leaves of plants which presented much of the accurate perfection that marked his later scientific work. The five years of his life immediately succeeding upon his hospital course by their multifarious changes no doubt succeeded in preventing him from becoming a mere scientific recluse. From Edinburgh he went to the British Embassy at Turin as resident physician, and there learned French and Italian; thence he went to Dublin to study midwifery; thence to Paris; thence to India in the service of the Honourable East India Company, and while there he was appointed Professor of Chemistry in the Medical College of Calcutta, being subsequently attached to the medical staff of the army in Burmah. Of all these varied apportunities he made the greatest use, and extracted from them the largest possible amount of practical knowledge. In 1855 he came to England and was attached to St. Mary's Hospital. He left St. Mary's Hospital for King's College Hospital, and this in its turn for Middlesex Hospital, while he held at the same time an appointment on the staff of the London Fever Hospital. Finally, in 1871, he went to St. Thomas's Hospital. By this time he had become famous as a teacher of singular lucidity and a worker of unexampled energy, the author of a medical classic in his "Continued Fevers of Great Britain" and of a remarkable series of essays upon the pathology of the liver. Murchison was one of the really great physicians of our day. Walter Moxon occupied a smaller canvas, but it is difficult to say that he was really a smaller man. Murchison in fact belonged to the profession and Moxon rather to Guy's Hospital, but the pathological work of the second was the best of its day and his faculty for teaching unrivalled. He was one of the few lecturers around whom the students would crowd really desirous of hearing what he had to say and knowing that they would be interested as well as instructed. He left no sign unnoticed, no symptom uninterpreted or undiscussed, and was as suggestive as he was accurate, and brilliant and epigrammatic without theatricality. Neither Moxon nor Murchison attained to any high official position in the Royal

College of Physicians, but they were men of whom that corporation have a right to be exceedingly proud.

This volume contains the biography of but one physician of any official celebrity, Thomas Moundeford, M.D. Cantab., who was seven times Censor of the Royal College of Physicians and seven years President between the dates of 1612 and 1623. He was an Eton man, a classical scholar, and a competent official, but has left no mark in the medical world. Sir Thomas Charles Morgan, M.D., also an Eton and Cambridge man, attained to considerable prominence at the end of the eighteenth and beginning of this century, but more as a philosopher and miscellaneous writer and as the husband of the popular author and hostess, Sydney, Lady Morgan, who wrote "The Wild Irish Girl," than as a medical man. Morgan was a friend and an admirer of Edward Jenner, the discoverer of vaccination, and his only purely medical work seems to have been an expostulatory letter to Benjamin Moseley on the latter's review of the report of the Royal College of Physicians of London upon the Jennerian work. Sir Thomas Morgan's knighthood was a semi-political honour, and was given to him by the Duke of Richmond, the Lord Lieutenant of Ireland. As a politician he was a strenuous advocate of Catholic Emancipation and took an active part in the promotion of the Irish fishing industries, having been a member of the Royal Commission to inquire into them. A materialism a little too pronounced for his time was apparent in his writings and seriously damaged his professional reputation, and it is as a man of the worlds of letters and fashion that he will be remembered—if at all. Dr. Benjamin Moseley, to whom we have just referred, studied medicine in London, Paris, and Leyden, and settled to practise in Jamaica in 1768, where he was Surgeon-General to the island, and made interesting notes on the climate, topography, and endemic disorders of the West Indies, from which, however, he seems to have drawn incorrect deductions. He was physician to the Royal Hospital for Veterans at Chelsea, and was a voluminous, and almost sensational, but unscientific writer upon tropical disease and allied subjects. He also claimed to be the first to have discovered that the scratches of a mad cat will produce hydrophobia, and he published at the beginning of the century a work on the prevention and cure of that disease, his method of treatment being to extirpate the wounded part and administer a full course of mercury.

Three purely scientific men are noticed at some length in this volume: two laymen bearing the same name as the physician whom we have last mentioned, and a physician, Dr. John Mudge, the son of the Rev. Zachariah Mudge, described by Sir Joshua Reynolds as the "wisest man he had ever met," and brother of Thomas Mudge, the celebrated watchmaker. John Mudge, M.D. Aberd., F.R.S., though an advanced and learned physician, as is shown by his views upon infection held as far back as 1777, is better known as a celebrated manufacturer of telescopes. He received the Copley Medal of the Royal Society for his work in this direction, and the President, Sir John Pringle, in making the presentation remarked of him: "Dr. Mudge hath truly realised the expectation of Sir Isaac Newton, who, about one hundred years ago, presaged that the public would one day possess a parabolic speculum, not accomplished by mathematic rules, but by mechanical devices." Telescopes occupied most of Dr. Mudge's time. He made two large ones with a magnifying power of two hundred times; one of these he gave to Count von Brühl, the other descended to his son, General William Mudge, director in 1791 of the Ordnance trigonometrical survey of the country, and later Lieutenant-Governor of the Royal Military Academy at Woolwich. Of the two Moseleys, Henry the father, the famous mathematician, was Professor of Natural and Experimental Philosophy and Astronomy at King's College and chaplain to that institution also, and it is to his mathematical labours that we owe the formulæ by which the dynamical stabilities of our ships of war have since been calculated. Henry Nottidge Moseley, his son, the celebrated naturalist, and member of the scientific staff of the *Challenger*, needs no further comment. His "Notes by a Naturalist on the *Challenger*" approaches Darwin's "Journal of the Cruise of the *Beagle*" in interest and importance; while the fact that he succeeded Professor Rolleston in the Linacre Professorship of human and comparative anatomy at Oxford University invests him with additional interest for our profession.

A Practical Ready Reference Guide to Parish Councils and Parish Meetings. By T. HARRIS STONE, M.A., and T. G. PEASE, B.A., Barristers-at-Law. London: George Philip and Son. 1894.

IF it were not for the fact that women may be elected parish councillors there would be something very patriarchal about this form of rural government, ascending as it does from parish to district and from district to county councils; and it is as well perhaps (considering the power in local sanitary matters) that the district council may be called to account at the hands of the county council by a parish meeting. But whatever may be said for or against the Local Government Act, as most of its provisions will come into operation in November it is well for all those interested in the matter to know what special powers are granted to the different bodies. The work before us deals mainly with those parts of the Act directly affecting parish meetings and parish councils—although there are cross-references to direct the reader to the Act itself, which is printed as an appendix to the book—and is exactly what it professes to be: "a practical ready reference guide." Every point is dealt with under a separate heading, and these are marginal and in alphabetical order, so that the book is really its own index. This is exactly what a book of reference should be, and the authors may be congratulated on having placed their matter together in as concise and handy a form as possible, whether for the use of chairmen, clerks, and councillors themselves, or for that of those merely curious upon the subject.

New Inventions.

A NEW GALVANIC ELEMENT FOR MEDICAL PURPOSES.

THE object of this communication is to bring to the notice of those of the readers of THE LANCET who are interested in electro-therapeutics what I consider to be a distinct advance in galvanic batteries for medical purposes. A new element has been submitted to me by Mr. Schoth, of 170A, Great Portland-street, W., which I am inclined to consider as the one best suited to the requirements of physicians and patients. It is, first, a dry element, which will stand a deal of knocking about without detriment to its efficacy; secondly, it is very light, the smaller model, sufficient for all ordinary purposes, weighing but a trifle over three ounces; thirdly, it is the most compact medical cell I am acquainted with—it is cylindrical in shape, measuring one inch and a quarter in diameter and two inches in height (under three inches with terminals); fourthly, it is quite as constant and as durable as other larger elements of a similar (Leclanché) type; finally, it is cheaper than most of the cells now in the market. Mr. Schoth is making two larger models of the same type. Their diameter is the same (two inches), their height respectively two and three times that of the smaller model. The intermediate size is suitable for making up hospital and other batteries, and for working

small induction coils. The largest is powerful enough to feed electric bells, or a small exploratory lamp.

A. DE WATTEVILLE.

MILNE'S ANTISEPTIC DRESSINGS.

WE have before us samples of corrosive sublimate gauze made by Mr. John Milne, Ladywell, London, S.E., under the immediate direction of Sir Joseph Lister. That alone is a sufficient guarantee of great care having been exercised in its manufacture. When shaken in a beam of sunlight no loose powder can be detected, and the evenness of the litmus colouring may be taken as an indication of the evenness of the application of the salt to the gauze. The gauze itself is of a soft and smooth quality, and Sir Joseph Lister has described this dressing as the most satisfactory he has met with. An excellent sample of lint medicated with the crystals of boracic acid and coloured with litmus has also been brought to our notice by the same firm. A "first field dressing" as supplied to the Admiralty has likewise been forwarded to us. It contains a wool pad, gauze, and waterproof together with bandage and pins, all enclosed in a compact envelope. It appears in every way to answer admirably the purpose for which it has been prepared. The firm sends also a carbolised ligature tube prepared under the direction of Sir Joseph Lister. It consists of a long tube containing carbolic oil, in which the ligatures are stretched and suspended between two plugs. This ensures cleanliness and prevents leakage.

Analytical Records
FROM
THE LANCET LABORATORY.

"CEREBOS" NUTRITIVE TABLE SALT.

(THE CEREBOS SALT CO., LIMITED, NEWCASTLE-ON-TYNE.

A BRIEF chemical examination soon revealed the composition of this preparation. It consists of ordinary table salt admixed with a definite proportion of phosphatic salt. It is therefore claimed to repair the breach created by the elimination of the valuable mineral constituents of flour during the preparatory process. Of course, the statements as to its real value can only be borne out by experience, but its employment in many cases would, doubtless, give satisfactory results connected chiefly with the process of bone construction. Excess, however, may prove in some instances no less an evil than a deficiency, and there are other articles of food besides flour which contain phosphate, and in considerably larger proportion.

SALUTARIS WATER.

(THE SALUTARIS WATER COMPANY, 236, FULHAM-ROAD, S.W.)

The chances of active organisms being contained in properly distilled water are very remote, since every particle distilled has not only attained a temperature of 100° C. at one stage in the process, but has also absorbed and given out again the 536 thermal units which represent the latent heat of steam. "Salutaris" is stated to be made with pure distilled water, and a recent examination of some samples convinces us of the truth of this statement. Evidence of the care taken in the preparation of the water is seen in the fact that it yields no appreciable residue (not more than two grains per gallon) when evaporated to dryness, and it is perfectly free from metallic taint. The water is brilliant, desirably sparkling, and well aerated with pure carbonic acid gas. It is well adapted for table use, and, on account of its remarkable purity, especially for invalid use or for the preparation of milk-and-soda or other beverages in which an effervescent water is desirable.

MOONLIGHT OINTMENT.

(BARCLAY AND SONS, 95, FARRINGDON-STREET, E.C.)

Our examination shows this preparation to consist of a non-rancifiable and non-saponifiable oil impregnated with a zinc salt; but so far its composition presents little novelty, although the ingredients incorporated are probably of a kind specially selected to render it suitable for the purpose intended.

KINGZETT'S "SULPHUGATOR."

(THE SANITAS COMPANY, LIMITED, THREE COLT-LANE, BETHNAL GREEN, E.)

The "sulphugator" consists of a small roll of gauze saturated with sulphur, and is intended for the convenient and probably effective treatment of bird-cages, rabbit-hutches, and other small habitations with sulphurous acid gas (SO_2). The idea is an excellent one, and renders the employment of a powerful deodorant and disinfectant easy and safe. In experiments tried in the laboratory the "sulphugator" was found to burn very satisfactorily and without trouble.

(1) PROTOCHLORIDE OF IRON PILLS; (2) PHOSPHORUS PILLS.

(ARTHUR H. COX AND CO., ST. MARTIN'S-PLACE, BRIGHTON.)

A point of considerable importance in the making of certain pills is that the coating thereof should be such as to prevent the oxidation of the contents—as, for example, phosphorus—or the deliquescence as well as oxidation of a drug like the protochloride of iron. On examining these pills we could gain no evidence that either form of deterioration had taken place; the phosphorus in the one glowed and evolved fumes immediately on scraping off the coating, and the iron in the other was found to exist in the form of the pure light-green protosalt. At the same time, the coating is not so refractory as not to yield to the disintegrating action of ordinary solvents or of the fluids of the body.

"MONTI TOSCANI" WINE MADE FROM GRAPES GROWN IN CHIANTI, TUSCANY.

(THE TUSCANY WINE GROWERS' ASSOCIATION, LIMITED, 6 AND 7, LONG-LANE, ALDERSGATE-STREET, E.C.)

This is a wine of the claret type, but especially and desirably free from acid constituents—a condition which renders it more delicate to the palate, the peculiar and agreeable flavour of the grape-derived ethers being in consequence more pronounced. Analysis gave the following results: alcohol, by weight, 8·64 per cent.; by volume, 10·73 per cent.; extractives, 2·42 per cent.; mineral matter, 0·20 per cent.; total acidity reckoned as tartaric acid, 0·16 per cent. It is evidently an unsophisticated product.

SPÉCIALITÉ LIME-JUICE CORDIAL.

(FELTOE AND SMITH, LIMITED, 25, AUGUSTUS-STREET, REGENT'S-PARK, N.W.)

There are few non-alcoholic beverages more wholesome and palatable than genuine lime-juice mixed with plain or aerated water. While acting as a pleasant relief to thirst, it contains an agreeable proportion of organic acid constituents, associated with potassium and phosphoric acid, which doubtless act beneficially in the system. The preparation of lime-juice, however, is not entirely without difficulties if the final product is to be brilliant and free from the musty smell which indicates a change to which the expressed juice of the lime is particularly liable. The above preparation is perfectly free from these objections; it possesses the peculiar aromatic fragrance of the fresh lime, keeps well, and is an attractive, bright, amber-coloured fluid. On analysing the following results were obtained: acidity, reckoned as citric acid, 3·20 per cent.; sugary constituents, 42·8 per cent.; mineral matter, 0·24 per cent. Its permanent property is evidently secured by the addition of salicylic acid, as we succeeded in extracting a moderate amount of this acid and recognising it by the iron test. The preparation yields a refreshing beverage of excellent flavour when diluted with water, and especially with aerated water. We are confident that it is made from no other materials than the pure fruit indicated.

THE LANCET.

LONDON: SATURDAY, AUGUST 25, 1894.

THE months of August and September are those in which there is greatest risk for England when cholera is present on the continent of Europe, and the particular period during those two months in which cholera has been most apt to prevail in this country is that which lies between the middle of August and the middle of September. The reason for this seasonal incidence may, in part, be due to the accident that the disease in England has generally travelled westwards across Europe, and it has only been towards the termination of our summer months that it has had time to reach us and to make its presence felt by any large number of cases. But this explanation would hardly hold good if there were a chance of recrudescence this year of cholera that had, so to speak, left its seeds behind last year. Such recrudescence would probably arise with the first maintained onset of hot, damp weather, and that it has not happened as yet may possibly be due to the fact that we have been passing through an exceptionally cold summer. The persistence of similar weather may possibly altogether remove the chances of recrudescence, even had such an occurrence been otherwise possible.

But we still stand face to face with the fact that cholera is prevalent abroad. The history of cholera in Russia, in Galicia, in North-Eastern Prussia, in Belgium, and perhaps also in Holland is to the effect that the disease is more widely spread and more virulent in type than during 1893, and were it not that the great bulk of the epidemic is still confined to the eastern side of Europe the risk to this country at this period of the year would be very substantial. Even as it is, some anxiety is felt as to what may happen during the next few months, and considerable precautions have been organised with a view of dealing with the disease should it manage to invade our shores. Our port sanitary organisation is, as heretofore, our first line of defence; and the port of London, which as yet has alone been tested this autumn, has shown its ability to eliminate cholera arriving in shipping and to prevent its spread without any hindrance to commerce other than is necessary for the cleansing and disinfection of vessels and articles that are properly regarded as being actually infected. We have other ports which are well organised, but we fear that, even on our eastern and most dangerous coast, there are places which are by no means so administered and organised as not to be portals by which the disease may make its way inland. For this reason alone we would urge upon inland as well as port authorities to be on their guard, and not only to remove from their midst all conditions favourable to the spread of cholera, but also to be prepared to isolate in a proper manner any early cases that may need to be dealt with.

In Austria, Galicia alone is infected; but the districts in Eastern Galicia and Bukovina are very gravely invaded, more than a hundred fresh attacks with some seventy or eighty deaths a day being now reported. But one of our greatest dangers arises from cholera gaining our shores by means of Russo-Jewish emigrants, who are hurried across Germany to ports of departure, and by reason of traffic with infected countries so near at hand as Belgium and Holland. In Germany great precautions are now taken with regard to emigrants crossing the Russian frontier, and these precautions tend to safeguard Europe generally almost as much as they do Germany itself. But, when all that can be done has been done, we can never pretend that no risk of the importation of cholera into this country exists.

For this reason it may be well to recall what our measures of precaution are. At the Local Government Board the activity which has been displayed during the past two years by the medical department is fully maintained. The daily record of cholera abroad and of all suspected choleraic or diarrhœal attacks that can be heard of is maintained. Coast and inland districts are still being continuously visited under the cholera survey which was instituted at the beginning of 1893; and where conditions favourable to the extension of cholera exist repeated visits have been paid and warnings have been issued. This applies especially to localities having water-supplies to which excreta and sewage may possibly get access; indeed, it is, we hope, only in such places that any sudden and wide diffusion of cholera would be practicable in this country. Next come towns and places where the soil and air are liable to be fouled by sewage, as by reason of defective systems of drainage and sewerage. In such places the maintenance and future recrudescence of imported cholera are not only possible, but are likely to occur. And then there are those districts where enteric fever and diarrhœa are present or are habitually excessive. These two diseases are of all others typical of that class of filth affections which mark out a locality as a likely one in which epidemic cholera may occur. As the result of the cholera survey a great deal has been done by way of amendment, and many of our sanitary authorities have, in consequence of advice given by their own medical officers of health, done much to remove those conditions which cause anxiety. The central authority have recently urged the desirability of notifying diarrhœa during the present season, and we learn that a number of sanitary authorities have, in accordance with the advice given to them, added that disease to the list of notifiable affections.

Inspectors of the Medical Department of the Local Government Board are, we are informed, kept in readiness to visit suspicious cases; and whether the cases terminate fatally or not bacteriological investigation is made when the stools or a portion of the lower ileum are forwarded to Whitehall with a full statement of the clinical history of the attack in question. In the metropolis the department, which is under the supervision of the medical officer of health to the County Council, is also active in all the directions in which it has any power and influence, and the medical staff are at all times ready to advise, to investigate, and to assist by clinical and bacteriological study in determining whether a given case is cholera and as to what action should be taken. In like manner, also,

much activity is being displayed by many officers of health in provincial towns and areas.

We may therefore say, without any exaggeration, that the sanitary organisation of England was never so well prepared to prevent any imported cholera from gaining a foothold in the country; and apart from any remaining chance of recrudescence, especially about the mouth of the Humber, we may with confidence look forward this year to a comparative, if not an entire, immunity from anything like an outbreak of cholera in England. But this end is hardly likely to be attained unless vigilance is steadily maintained in the ports along our shores and throughout the country. Absolute confidence of escape is impossible so long as it is notorious that in some of our port districts and in some of our inland towns and villages neglect still exists of the very kind which is likely to facilitate the admission and extension of cholera. Some localities, including both classes of districts, suffered and received a distinct warning last year; but, notwithstanding this, there are authorities who still maintain an attitude of considerable indifference and of unbelief as to danger. Districts thus governed are more likely than any others to be rudely awakened, and the authorities having had imposed upon them the statutory duty of caring for the public health are not likely to escape from public obloquy if, after two complete years of warning, they fail in the duty which not only devolves on them but which they, by acceptance of office, have deliberately undertaken.

THE Section of Psychology at the annual meeting of the British Medical Association held in Bristol recently was fortunate in having Dr. FIELDING BLANDFORD as its President. His address on the Prevention of Insanity was characterised by the breadth and thoughtfulness which we expect to find in the utterances of one so experienced and so practical. Its bearings on the public weal are so all-important as to deserve being brought more fully into prominence than could be done in the mere record that we gave of the address in THE LANCET of the 4th inst. The evolutionary law, whereby, as time goes on, increasing complexity of the brain is the accompaniment of higher civilisation, of the march of education, and of the harder competition and struggle for existence, is the unavoidable means of introducing difficulties of adjustment and liabilities to disturbance in the machinery upon whose working the functions of the brain depend for their uniformity and stability. Recognising all this, and giving due weight to more recent statistical evidence that insanity is not increasing, Dr. BLANDFORD fears much that insanity is not decreasing, and he is of opinion that neurotic affections generally, including insanity, are on the increase, one single illustration of this being the fact that in 1891 the number of suicides in England and Wales was the highest on record—namely, 2483. "All these nervous disorders," he goes on to say, "taken together with the undoubted and registered insanity with which so many of us are concerned, point to the same fact—that in the evolution of our race the complex brain is becoming more and more unstable, and more prone to be upset by faulty surroundings or circumstances which would not be felt by a more stable organ." Dr. BLANDFORD asks himself the question whether anything can be done to prevent such an increase of neurotic affections, and he bases his reply upon the fact that the preventable character of many maladies, zymotic and otherwise, which were the scourge of our land has been demonstrated, whilst at the same time we live amidst more healthy surroundings with improved hygienic conditions, shortened hours of labour, and increased recreation. This care for life and prevention of disease disturb the ordinary operation of natural selection in preserving the race, because, as Dr. BERRY HAYCRAFT says, "if we attempt to do away with its selective influence—namely, the elimination of the weak and the preservation of the strong—we must supply this selective influence by something else, or the race will tend to deteriorate."[1] And, again, he remarks: "I do not see how we can shirk the fact that preventive medicine and civilisation between them have already deteriorated in a marked degree the healthy vigour of our race. If things continue in their present course it is fair to assume that in a hundred years or so the wretched products of our race—embodiments of every constitutional disorder transmitted by ancestry from whose ranks the diseased have not been weeded out before the child-bearing period was over by those natural agencies hitherto free to act—will drag out their lives martyrs to surroundings which they have tried to mould; they who, as a race, should have been moulded by their surroundings." While granting the tendency to deterioration in the sense here referred to, we are not prepared to admit that there are not concomitant correcting influences which would serve to counteract and to retard any such rapid and sweeping process of racial destruction. It so happens that the structural delicacy and all-pervading influence of the brain and nervous system render the nerve centres most prone to develop and to perpetuate these deteriorations of which insanity, being the saddest and most intense, merits the closest attention on the part of the laity no less than of the medical profession, with a view more especially to its prevention.

Dr. BLANDFORD states that he has long been of opinion that insanity is to be prevented chiefly by limiting the propagation of this most fearful disease through the union of affected persons. Although there are not forthcoming statistics as to who are the persons most likely to cause the disease in their descendants, Dr. BLANDFORD, from his own observation of inherited insanity, is inclined to say that the taint is transmitted through the female rather than the male. In the opinion of some authorities it would appear to be very rare that one sex has greater transmissive power than the other. It is a matter of surprise that exact data have never yet been arrived at on this point, for it is one that possesses far fewer complications in its elucidation than some of those investigations undertaken by the modern medical psychologist. Given a parental (with or without ancestral) inheritance of insanity in a person, how, asks Dr. BLANDFORD, are we to prevent him or her from marrying? The first consideration is that the children of an insane parent should marry partners who are themselves free from all nervous disorders and whose inheritance is untainted by any such disease. Legislation on these lines is admittedly unattainable; but it is not beyond

[1] Darwinism and Race Progress: Milroy Lectures, 1894.

hope, as Dr. BLANDFORD points out, that some day a man or woman may be able to dissolve the union which binds him or her for the rest of life to an absolutely hopeless and incurable lunatic. The education of public opinion, always a tedious process under such circumstances, must be relied upon to aid the efforts of the medical profession in opposing the marriages of the unfit. The policy of concealment, mystery, and avoidance of inquiry as to family history is a mistaken one and leads to much unpleasantness and misery. Leaving general questions and coming to individual instances, Dr. BLANDFORD thinks, if insanity is to be prevented, that a man or woman who has had an attack of insanity had better remain single, and that a woman who has had a puerperal attack ought, for the sake both of herself and of the community in general, to have no more children; and he gives good reasons for his views, although he does not expect that they will meet with universal approbation.

The next great question is what can be done to prevent the development of insanity in children who come of an insane stock. Here the timely and intelligent advice of the family physician has to be relied upon in securing for such offspring from the earliest time of life proper nourishment and care and a judicious upbringing. Constitutionally timid and nervous children must not be startled and frightened by fearsome tales, but guided onwards as much as possible in an equable groove until they become more mature and stable. The evil and gross habits too often taught children by nurses and other children are fruitful sources of insanity and must be borne in mind both by medical attendants and parents in the education of young folk. In the case of boys and girls with a strong hereditary taint Dr. BLANDFORD thinks it very important that they should be brought up to be total abstainers, lest they contract the neurosis of inebriety; and with regard to the question of habitual drunkenness he says that: "Women will not enter inebriate retreats voluntarily; but whenever the Legislature can find time to pass an Act for compulsorily confining habitual drinkers it will be found, if I am not very much mistaken, that the number of females will equal, if it does not surpass, those of the other sex." In his address Dr. BLANDFORD sets forth the views of a matured experience free from fads and brimful of common sense, and we commend its perusal to the ordinary reader as well as to those who are more scientifically disposed.

THE democracy of England has many suggestions made to it which are not complimentary to its intelligence, and amongst these is the suggestion that the great voluntary hospitals should be supplanted by State institutions. We give the democracy credit for too much sense to be misled by the arguments that are used in support of such a proposition. These are of the flimsiest order, as a little examination will show. They amount to this, that the practice of the hospitals is based on the practice of "vivisection"; that the poor are practised on for the sake of the rich; and that the cure for all these evils is to put hospitals on the rates and make them State institutions. The State is now, in the estimation of a noisy group of busybodies, the embodiment of all wisdom and of all humanity. The people that talk so must have very little faculty for observation, and must have little knowledge of the subject. There are such things already as public State- or rate-supported institutions in the shape of workhouse infirmaries. Many of these are now fairly creditable institutions, if many of them are not ideal in management and internal arrangement. But most of us who have arrived at middle age can remember when they were disgracefully conducted, and the improvements have been based on the model of our voluntary hospitals. Their construction, their nursing, their amenities of all sorts, have been the model up to which our State hospitals have worked. It is ridiculous therefore that the faults of any particular hospital should cause the whole system to be disparaged by street orators who probably have never contributed £5 a year to the maintenance of any hospital at all. There is one respect in which the State hospitals or workhouse dispensaries are still behind the great voluntary hospitals which for centuries have been the glory of Great Britain. They are officered only by one or two paid medical officers, often, no doubt, men of great efficiency and merit; but they themselves would be the first to disavow any claim to be compared with the members of our voluntary hospitals' staff, who are the principal teachers of medicine and surgery and the picked men of our great medical schools. But a larger field for comparison between our voluntary hospitals and State hospitals is supplied by the hospitals of the Continent, which for the most part are State institutions; and those who are so glib in their denunciations of our hospitals—which are for the most part voluntary institutions—will do well to inquire whether in the State hospitals of the Continent there is any superiority.

Of all absurd and unjust charges to bring against hospitals that of "vivisection" is the most so. There is no general authorisation of such practice in favour of hospitals, and we may be sure that the Home Secretary would grant none. If any hospital surgeon has such an authorisation it is not in his capacity as surgeon to a hospital, but on other grounds. Where is the justice, then, of mixing up the question of "vivisection" with that of hospitals? There is absolutely none. It is done to injure hospitals, and done with a lack of honesty which ought to discredit those who resort to such methods of argument. But it is said that the great operations of modern surgery are the outcome of "vivisection," and the remedy demanded by the sapient critics is that the Government should take control of hospitals. This argument may do for a small clique of fanatics, but it is not likely to take serious hold of our more intelligent citizens. "Vivisection" has undoubtedly tended to advance the art of medicine; but it is equally true that mankind has had to find out for itself what surgery it could bear. The great triumphs of surgery have been made independently of it. Its great operations have been the outcome of sympathetic observation of what human nature can suffer and what it can bear to be relieved of such suffering, though many of the proceedings towards such relief have been made possible by "vivisection" or experiments upon animals. It is very well for healthy people to meet in the street on a fine summer's day and denounce the art by which splendid results have been achieved; but it is an insult to the common sense of Englishmen to fear that they

will be led by such proceedings into suspicion of the hospitals where they have ever found an open door and the highest skill for the relief of the poorest person. If such talkers really represented English opinion we should indeed take a gloomy view of our destiny as a nation. Let it be clearly understood that in our hospitals, as such, "vivisection" is not practised, and that in countries where the hospitals are State hospitals there is infinitely more "vivisection" than in our own.

If the orators, who think it a good use of a summer afternoon to abuse the hospitals of England, can persuade a few thousands of out-patients to stay away from the hospitals they will do the hospitals and the medical profession a good service; but they are not likely to alter the deep conviction, bred of experience, that in grave emergencies and for serious cases, hospitals are a veritable godsend, and that those of England, supported by the benevolence and free will of the charitable, will bear a favourable comparison for humanity and for efficiency with any hospitals in the world. We will venture to say that if State hospitals were created to-morrow, at an enormous cost to the State, as would be the case, the British poor would prefer the hospitals now existing, officered by free and honorary staffs, and managed and maintained by kindly and benevolent people. We are even disposed to think that the street orators would quietly display the same preference and sigh for the institutions they had helped to destroy.

Annotations.

"Ne quid nimis."

THE CHELSEA HOSPITAL FOR WOMEN.

As our readers are aware, the election of a new medical staff for the Chelsea Hospital for Women took place last week. The occasion was in many ways one of exceptional interest and importance, both to those who are especially concerned with the welfare of the hospital as well as to the public to whom they appeal for funds in its support. An independent committee of inquiry had made a most careful investigation into the condition of things at the hospital, and had issued a report so unfavourable that the distributors of the Hospital Sunday Fund had felt themselves compelled in consequence of it to make no grant to the Chelsea Hospital this year. The report in question not only found that the medical staff had done things they had better not have done or had better have done differently, and had left undone things that badly needed attention, but it expressly included the board of management as at least equally responsible with the medical staff for the state of things disclosed. Under these circumstances, and, as we think, very properly, the medical staff immediately resigned; but, strange as it may seem, the board of management, which was found to have been equally in fault, refused to admit its responsibility in any practical form, and, so far from resigning, at once set about the business of electing the new medical staff. This seems to us to have been a very bad beginning if the Chelsea Hospital is to be put right with the public. That the very men who had failed adequately to discharge their own duties as managers of the hospital should remain in office, and practically retain it in their power to apportion blame or otherwise to the members of the late medical staff, appears to us to be a proceeding altogether undesirable. Certainly, if a process of weeding was felt to be necessary, the board of management required it at least as much as the medical staff. The board, however, has chosen to disregard the strictures of the committee of inquiry so far as these concerned itself, and to act as though its own conscience was void of offence as regards any responsibility for the errors in the management of the hospital to which the committee of inquiry called attention. So far as we can judge on the facts before us, however, the truth seems to be that the board of management was as much to blame as—if not more than—the medical staff; and undoubtedly the first step to restore public confidence in the administration of the hospital should have been the resignation of the board of management. In such a crisis as the present, when an entirely new medical staff had to be elected, the friends of the hospital would have been well advised to insist on the appointment of a new board of management, and to secure the presence on it of names that would have carried weight with the public and been a guarantee that the lessons of the recent past were not forgotten, and that the conduct of the Chelsea Hospital was about to be placed in strong and capable hands.

"HOW TO MAKE THE MOST OF LIFE."

THE Grindelwald Conference held this year was marked by a new feature. In addition to the religious discussion which had previously taken place, there was opened on Aug. 13th a literary and scientific department, the debates in which were to continue at intervals for a month. The introductory address in this Section was given by a member of our own profession, Sir Benjamin Ward Richardson, with after addresses delivered by Sir Robert Ball, Mr. Whymper, Mr. Carus Wilson, Mr. Edmund Gosse, and several others. The title of the introductory address was, "How to make the Most of Life," the lecturer dealing naturally with the physical side of the question in the first place. He set forth by stating that, according to his views, that man or woman who trained himself or herself in the best bodily and mental health made the best of life. He considered the bodily welfare first, not because he reckoned it more important in itself, but because the health of the mind so largely depends on the health of the body. He then described the various conditions leading to good bodily health, and showed how a good engine outlived many of its masters because they attended to it more carefully than they attended to their own bodies; kept it clean, made it regular in its work, freed from obstruction in its furnaces, and fed it with proper and simple fuel and pure air. He then traced the relationship of life to maturity, indicating that life should extend five times the period of maturity, so that a man taking twenty-one years to mature should live to 105 years. Such length of life was exceptionally obtained, which showed the possibility of the occurrence; and why it was not more widely obtained in the human species was due to errors, often of the grossest kind, some of which were pointed out. In passing to the question of mental health the lecturer dwelt on three subjects—diligence, learning, and travel. Diligence he thought a better term than work, because it included everything; diligence in labour, in play, even in sleep. "Blest are the diligent who can command time, nature's clock." Of learning he said that the most important was historical, and amongst the historical the most important was biographical. "Know the life of a man of any period," he remarked, "and you must then know not only the man but his period also." The fact was illustrated from several instances, but especially from such as showed the existence of great men who in their own time were practically unknown; men, for instance, like Stephen Grey, who, in the early part of last century, carried from the Charterhouse to Faversham the

elementary parts of our present electrical science in the little basket from the contents of which he laid down the first elementary electric telegraph. Dealing with travel, Sir Benjamin Richardson treated on the marvellous expansion of the mind that came from excursions over the world. The famous Dr. William Harvey and men of his school made the "grand tour" in their day. They went to Italy, came back, as it was said, "Italianated," and were thought to be remarkable scholars. Now men went all over the globe; the whole world became their Italy, and they might be said to be "planetated." This was a mode of learning in which the surface of the earth became the living map, the spoken languages, the living grammars—a mode that must extend day by day as the mind yearned for more knowledge and the power that springs from it. He saw no end to a line of learning by travel now inaugurated, and he suggested as the next step that university ships should be manned, not with guns and fighting men, but with professors, laboratories, observatories, and libraries, and in which voyages of research should be made by all classes round the world, England, as mistress of the seas, leading the advance.

THE MEDICAL PROFESSION AND THE "STORES" SYSTEM.

THE programmes of certain of the "stores" give material for curious reflections. It appears from the circulars that at these institutions the members can have consultants on terms of accommodation as they can have coals. We shall, in the first instance at any rate, deal quite impersonally with this question, and point out what appear to us to be arrangements calling for criticism. In the price list of one society there is a list of "names of professional men with whom beneficial arrangements have been made by the society." This includes two practitioners, Fellows of a Royal College of Surgeons, and four dentists. There is a noticeable difference in the advertisement of the "stock and share brokers," under which head the following delicate line occurs: "Members can obtain particulars on application at the Secretary's office." The fact is that the rules of the Stock Exchange are more explicit than those of the medical authorities. The former forbid advertisement of all sorts and punish the offence with excommunication. Surely the medical profession should not be outdone in this matter by the Stock Exchange. On the programme of another association we meet with the following paragraph: "*Oculists.*—Members are informed that arrangements have been made whereby an eminent oculist can be consulted in cases where professional advice is desired or appears to be necessary. For particulars apply by letter to the Secretary, or personally in the Optical Department." In this instance a prescription form for a certain ophthalmic surgeon is before us, as also a letter from the Secretary, informing the applicant that the surgeon's fee to members of the association will be one guinea. We can well believe that members of the medical profession have entered into such arrangements without much consideration; but they seem to us to be open to considerable objection and to be uncalled for. In the first place, they involve advertisement of the names of practitioners and their being sent promiscuously to the patients of other practitioners. We feel sure that the gentlemen whose names are so published would not publish their names on any private circular for distribution to the patients of other practitioners. Secondly, there is no need whatever for such concessions. Private practitioners are quite ready to make every allowance in those cases where the means of their patients are limited. The tendency of such arrangements as we are criticising is to attract shabby or ungenerous persons who wish to pay less for their medical attendance than they can afford. A similar remark applies to the consultant "oculist." We venture to say that there is no ophthalmic surgeon of standing in London who would not see a patient for a guinea if assured by his ordinary medical adviser that the sufferer could not afford more. Evil is notoriously often wrought by want of thought, and we make these criticisms in confidence that they will be well received by those concerned, and with the conviction that medical "arrangements" on the programmes of "stores" are entirely out of place and derogatory to the dignity and fraternity of our profession.

PROFESSOR SCHÄFER ON THE ANTI-VIVISECTIONISTS.

PROFESSOR SCHÄFER'S well-considered utterances on the anti-vivisection movement, delivered before the Physiological Section of the British Association at the Oxford meeting on Friday, 10th inst., should give pause to those whose object it is to prevent, under all circumstances, the scientific physiologist having recourse to experiments on animals, where other means have failed to shed light on the problems on which he is engaged. The anti-scientific agitation—for such it is very appropriately termed by Professor Schäfer—has met with the success that it deserves, and physiologists may anticipate that so long as their experiments are as carefully carried on as at present, so long may they expect to receive the support and approbation of all right-minded people who have any knowledge of the question and the interests at stake. It is, perhaps, as well that such agitators as those who are keeping the "anti-vivisection movement" alive should remain in existence if their exertions are to be rewarded with the results assigned to them by Professor Schäfer, who maintains that in this case we have only another illustration of the old-established principle that persecution of a good cause, in the long run, tends towards its development and propagation. "Vivisectors" are not cruel; they are most of them thoughtful and careful men, whose one great aim is to add to the sum total of knowledge of the functions of the human and animal body, and to apply this knowledge to the prevention of disease and suffering, and any agitation which interferes, or hopes to interfere, with the attainment of such results must, we believe, ultimately fail to attain its purposes.

THE DIFFUSION OF SMALL-POX.

SPEAKING of the country generally, the reports as to the prevalence of small-pox which have reached us in respect of last week are eminently favourable, giving evidence of a decreasing epidemicity of the disease. In London the number of new cases notified was 47 and of the registered deaths 4, 2 of which were those of persons from St. Marylebone, 1 from St. Pancras, and 1 from Lambeth. At the close of the week there were 160 patients under treatment in the institutions of the Metropolitan Asylums Board, and 19 were in the Highgate Small-pox Hospital, making 179, against 209 on the preceding Saturday. There were 37 admissions to hospitals in the week, against 152 three weeks previously. In the early part of the present week the returns at the ships in Long Reach were more favourable than any made for many weeks past, and hopes are again entertained that small-pox will soon disappear from the metropolis. On Sunday last there was not one case admitted in London, a thing unknown for some time. In the Portland-town district of St. John's-wood the recrudescence noted last week has not been maintained, the numbers for the closing days of the week being 4 cases on Friday, 1 on Saturday, and during the next three succeeding days *nil*, 1, and 2 respectively. Nevertheless, on Sunday several schools remained closed, as well as the Workmen's Hall, though the Free Dispensary was shut on Saturday both as a public vaccination

station and a reception house for patients. Much disinfection has been practised, and it is calculated that some 3000 persons have been either vaccinated or revaccinated during the prevalence of the disease. A relief fund was started a few weeks ago and has been of much practical value, as much distress has prevailed on account of the fear of sending work to the numerous laundries, &c., in the invaded quarters. One or two cases occurred in the northern and western suburbs of London during the week, and in the west of England a death from small-pox was registered at Plymouth. The disease shows a great decline in Staffordshire, Willenhall sharing in the fall, with under a score of cases in the first week of August, but another death occurred last week in the person of a young man who had not been removed to hospital, his death resulting very shortly after seizure. Only half a dozen cases were heard of in Birmingham, and only one in Manchester and in Preston. There have been no new developments at Garston, where the sanitary officials have been busily engaged in seeking for possible cases at suspected houses. Three or four attacks were made known at West Hartlepool, and the health officer stated at the last monthly meeting of the sanitary authority that the disease had been smouldering in the town for some time, having been either concealed or not recognised. North of the Tweed we hear of another case at Kirkcaldy, necessitating the reopening of the infectious disease hospital.

ANÆMIA WITH CORD CHANGES.

IN the last number of *Brain* appears a paper of more than usual importance by Dr. H. M. Bowman, in which, in addition to an interesting record of a case of this nature, there is also given a short account of the several more or less interesting papers which have described this condition and recorded cases in which it occurred. We have from time to time referred to those papers as they appeared in German medical literature, for they possessed unusual interest in that they described examples of what seemed without doubt to form a somewhat large group of cases with more or less similar symptoms, and with almost identical changes in the spinal cord. Dr. Bowman's is, we believe, the first contribution to the literature of the group in this country, and we congratulate him on the exceedingly interesting character of the clinical case and on the complete and careful manner in which it has been worked out. The patient was a woman aged fifty-three, who was first admitted to hospital on account of great anæmia, weakness, and headache. Examination of the blood revealed an excessive poverty both in cells and hæmoglobin. Under treatment with arsenic the patient made a rapid recovery, and although still pale and somewhat feeble when she left the hospital to go to a convalescent home she was in a condition which might be described as one of fair health. A few months later, however, she relapsed, and when again admitted she had already been unable to walk for a month. She was found to have some feebleness of the upper limbs and considerable weakness of the lower, so that there was just ability to raise the heel from the bed. The legs were subject to severe and sudden involuntary spasms. There was slight ataxy but no tremor, and there was impaired sensibility in the lower limbs. The knee-jerks were very active, but no ankle-clonus was found. The sphincters were unaffected. Her condition became gradually worse, the anæmia increased rapidly, sensibility became more affected, the legs became rigid and motionless, and ankle-clonus was present. The arms also became much weaker, so that the patient could scarcely move them; troublesome vomiting was occasionally present, and towards the end numerous retinal hæmorrhages were visible. There was incontinence both of urine and fæces, and the patient died six months after her second admission and fourteen months after her first. At the necropsy, besides the anæmic state of the various organs, the only abnormality visible was a cyst, apparently of inflammatory origin, situated in the head of the pancreas and communicating with the duodenum. The spinal cord, after hardening and staining, was found to have extensive areas of sclerosis, most marked in the posterior columns, but present also in the lateral and in the anterior. The walls of the arteries were greatly thickened in the most advanced areas of degeneration, and slighter changes were present in the areas in which the sclerosis was not so intense. Dr. Bowman, in concluding his paper, considers the question of the relation of these changes to the anæmia, and after discussing the various points which such a consideration raises he throws out the suggestion that the cases of which his patient formed an example, in which spinal symptoms of a somewhat anomalous type are associated with grave and progressive anæmia, are to be regarded as belonging clinically and pathologically to the group of postero-lateral sclerosis, or ataxic paraplegia, and that it would be unwise, until further light is thrown on the subject, to be too positive as to the relation of the nervous symptoms to the altered blood state. He himself, however, is inclined to regard the anæmia as primary, and probably the cause of the changes in the cord.

THE SPREAD OF SCARLET FEVER BY MEANS OF MILK.

MR. SHIRLEY MURPHY has recently presented to the Public Health Committee of the London County Council a very interesting and closely reasoned report on a sudden outbreak of scarlet fever which occurred in the spring of this year at Blackheath. The outbreak, which was more particularly confined to the subdistricts of Greenwich and Lee, commenced about March 19th, and after continuing for four days rapidly declined. At an early date suspicion fell upon a certain milk-supply as being the means of disseminating the disease, and Mr. Shirley Murphy was soon able to establish the fact that the milk from a certain farm was responsible for the outbreak. When, however, inquiry was made as to the means by which the milk obtained the property of infectivity, numerous difficulties—in the large part insurmountable—were encountered. It was found that there had been cases of scarlet fever among those who were brought into contact with the milk and the cows, but Mr. Shirley Murphy, on making a careful analysis of the dates of attack, demonstrated that those cases concerning which there could have been reasonable suspicion were in all probability the victims and not the cause of the outbreak. There are several features in connexion with this outbreak that give it considerable interest. On Mr. Shirley Murphy's first visit to the farm he discovered that one of a pair of newly calved cows, which had on March 17th arrived from Eltham, had lost patches of hair and presented on the teats numerous excoriations and scabs; and that another cow in the same shed was also affected with abrasions and scabs on the teats. On a subsequent visit two other cows were found to be affected with ulcerated teats, and it was ascertained that three out of the four cows referred to were milked by the same milker—i.e., the one who milked the Eltham cows. Unfortunately it was found impossible, owing in large part to contradictory evidence, to ascertain the exact distribution either as regards time or customers of the milk from the Eltham cows, but it was an interesting point to note that the milk of certain cows which supplied the "nursery milk" failed to carry infection to those who drank it. Briefly summed up, it may be said that the Blackheath outbreak was one which was certainly spread by infected milk, that there was no evidence of the milk having received its infective properties directly from human agencies, and, lastly, that one of two cows which

arrived on the farm two days before the outbreak, presented loss of hair in patches and signs of an eruptive disease on the teats. Here the question, from lack of reliable evidence, must be left, but there are certainly some indications of the possibility of the outbreak having been caused by a disease of the cows. On reading the Blackheath report two points are naturally suggested: in the first place, the necessity for some definite regulations in regard to cows affected with udder disease; and, in the second, the desirability of more method being exercised in dairy farms in reference to the distribution of milk, in order that it may be possible in outbreaks of this kind to trace back the milk to certain cows or groups of cows. The economical aspect of some such provision as this must be obvious, inasmuch as where the evidence pointed conclusively to disease of the cow, and not to human agency, as the cause of contamination, it might suffice to withdraw the affected cow or cows from contributing milk, instead of perhaps irretrievably ruining the farmer by stopping the sale of all his milk, and by this action drawing public attention to the outbreak.

THE EXECUTION OF SANTO CASERIO.

THE execution of Santo Caserio produced very little sensation in Paris on the day upon which it was carried out. Parisians at the time exhibited a striking disinclination to hold any conversation on the subject. The law was fulfilled, and that was all-sufficient. We understand that the same feeling was demonstrated even in Lyons, where the execution took place. A great deal has been said about the demeanour of the prisoner, upon which we need not dwell; but less has been said about the executioner Deibler, who seems to have been nervous and not well disposed towards his terrible task. It is not to be wondered at, for in Lyons he was refused admission, together with his son and his two assistants, at the door of almost every hotel where he appeared. He found at last an asylum in the Hôtel du Midia, upon the Place Perrache. The culprit himself gave some trouble, and a cordial which Dr. Blanc offered to him was refused. The knife in falling cut through the neck of Caserio so high up that it just shaved by the chin and points of the ears, and the skin at the back of the head was shrunken from the pressure caused by the terrible effort of the condemned man to press the head backwards. In concession to the request of Caserio, conveyed by his advocate, no necropsy was made of his body. A curious fact connected with the execution was that Deibler, the executioner, wrote a report or registry of his duty, to be officially retained, in which he recorded that on Aug. 16th, 1894, at 4.40 in the morning, he, the undersigned, Deibler, "exécuteur des hautes œuvres," took possession of Santo Caserio, condemned to death on Aug. 3rd, 1894, by the Court of Assizes of the Rhone, to make him undergo the penalty pronounced against him.

POISONOUS HERRINGS.

AN inquest has been held at Bradmore, near Wolverhampton, on the body of Francis Barney Faulkner, a commercial clerk, thirty-eight years of age, who took home from a fish shop a red-herring, which his sister told him was decomposed, but which he insisted on having cooked and which he ate with his tea. He was seized soon afterwards with gastric and enteric symptoms, and died. The medical evidence was that death occurred from irritant poisoning, caused by the eating of the decomposed fish, evidently a correct verdict. As a general rule medical officers of health are most decisive regarding the destruction of decomposing fish offered for sale as food, and many persons would be surprised if they knew the amount of fish that is condemned in the course of a year; but the most careful inspection is scarcely sufficient to remove all danger, and we have still largely to depend on the honesty of the salesmen and the care and common sense of the purchaser. A decomposed fish is a small article that can be easily disposed of and thrown aside when inspection is near, and the occurrence of decomposition in fish is also more rapid than in many other forms of animal food; the decomposed fish is more dangerous as a poison than most other animal products, so that in hot countries the name of "fish poison disease" has become of common use. The symptoms produced by poisonous fish are very distinctive, and have been pointed out by several writers. They are usually of two kinds: one, a severe attack of indigestion, passing, in acute cases, into the gastro-enteritic form attended with an icy coldness of the body and depression and accompanied by great nervous disturbance; the other, a worse form, with attacks marked by nausea and vomiting, first of food, then of mucus, depression of the pulse, coldness, cramps, and diarrhœa, followed by convulsive movements, and sometimes after recovery by nervous symptoms, especially want of power, which lasts for several days. It should be remembered that very slight evidences of decomposition of fish are sufficient to indicate the possibility of an extremely poisonous product in the body of the animal, so that fish must never be trusted in the same way as high game and mutton sometimes are. In a word, the faintest trace of decomposition in fish forbids its use as an article of food.

ANATOMICAL CHANGES IN DIPHTHERITIC PARALYSIS.

IN a recent number of the *Neurologisches Centralblatt* appears a short abstract of an important paper by Dr. Bikeles, the result of some work in the laboratory of Professor Obersteiner. A male patient aged forty had an attack of diphtheria. During his convalescence, about four weeks after the attack, nasal speech, difficulty in swallowing, paresis of the lower limbs, paræsthesia, ataxy, and loss of knee-jerk were present. Later some sensory impairment and ataxy of the upper extremities occurred, but the electrical reactions remained normal. The patient died of respiratory paralysis four weeks after the onset of the nervous symptoms. In a number of peripheral nerves examined no changes were found; in the spinal cord, on the other hand, especially in the dorsal region, in the root zone of the posterior columns, and also in the posterior part of the lateral columns and in the anterior root fibres degeneration was marked. Dr. Bikeles, while not wishing to draw any dogmatic conclusions from these observations, directs attention to the similarity of these changes to those occurring in ergotism and also in pernicious anæmia. In the fact that the posterior roots were affected, especially in their intra-medullary fibres, he finds an explanation of the circumstance that post-diphtheritic ataxy so often closely resembles tabes.

THE BEDFORD GUARDIANS AND TRAINED NURSES.

THE need for a very thorough reform in the nursing of our workhouses and workhouse infirmaries is admitted on all sides, and no one whose opinion is of any value will deny that the only means of bringing about this reformation is by the employment of efficiently trained nurses, schooled in proper discipline and demeanour at one of the several nursing institutions in the country. Unfortunately, however, the Bedford board of guardians, whether or not they are anxious for reform, are apparently not inclined in any way to modify the relations which have hitherto obtained between themselves and untrained "nurses," and they fail, so at least it appears, altogether to comprehend that a well-educated woman, who has spent both time and money in preparing herself for her profession, has any more claim on their consideration than an able-bodied inmate told off to act as

nurse to her sick companions. Furthermore, the guardians fail to acknowledge that an association such as the Workhouse Infirmary Nurses' Association, which has trained nurses at considerable expense, and to which, be it observed, the guardians have applied for a nurse, is entitled to be treated with due courtesy. The Bedford guardians have, in fact, recently refused to permanently appoint a nurse practically because she belonged to the association in question. It was contended that her connexion with the association, and the fact that its rules necessitated her resigning—should it be necessary—through the association instead of independently, would place her in the position of endeavouring to "serve two masters," and render her not amenable to the discipline of the infirmary. The secretary to the association, on requesting the clerk to the guardians to inform him why the nurse had been called upon to resign, received the reply that "the guardians did not recognise the right of the association to question them in such matters." We have endeavoured to read between the lines of the report of the proceedings at which the subject was discussed; and it seems to us that the guardians, for reasons which did not transpire, were anxious that the appointment of the nurse should terminate, but that no satisfactory reason was forthcoming for her dismissal. We notice, however, that the master of the workhouse is reported to have conveyed to the nurse the idea that the hostility towards her was due to the fact of a report having been circulated that she had come to effect a change in the nursing system of the house, and "that the guardians strongly objected to having interference." Whatever may be the fact in regard to the case, we shall be surprised if the association has further dealings with a board of guardians who first ask to be supplied with a nurse and then refuse to furnish a reason for her dismissal.

SANITARY AUTHORITIES AND THE ENFORCEMENT OF THE PROVISIONS OF THE LONDON PUBLIC HEALTH ACT.

SECTION 2 of the London Public Health Act includes among nuisances which the sanitary authority is bound to deal with in a summary manner "any water-closet, &c., so kept or in such a condition as to be dangerous or injurious to the public health," and Section 37, subsection 3, provides that if any closet be found not to be provided with proper water supply and fittings the sanitary authority *shall* serve on the owner &c. a notice requiring the work to be done within a fixed time under penalties, or may do the work themselves, recovering the cost. Yet such is the apathy of the local, or so-called sanitary, authority that when the bursting of the service pipes of a closet, in consequence of their exposure to frost, has necessitated the cutting off of the supply the owner is often allowed to delay the repair indefinitely, unless the matter is taken up by some private individual or unofficial body. For example, in one of the largest metropolitan districts, having a rateable value of over £1,000,000, we are told there are within 200 yards of the town-hall a number of houses the closets of half of which have been without water since January last, and some since the previous winter. In this particular instance the authority cannot plead ignorance, since the condition of the property has been repeatedly pressed on their attention and they have had other repairs of greater or of less importance carried out. Nor can they or the owner throw the blame on the tenants, the great majority of whom are clean, respectable people; some, indeed, both "in the trade" and out of it, having effected many repairs and improvements, though unfortunately plumber's work is beyond their power. The regulations of the water companies secure the protection from frost of so much of the communicating pipe as is underground—that is to say, so far as its leakage would not seriously incommode a not very fastidious householder; but, since their regulations are aimed at the prevention of waste only, the expense, discomfort, and even illness incurred in consequence of the bursting of pipes above ground, and the deprivation of water for days, weeks, or more, are matters of which they do not, and cannot be expected to, take any notice. But surely if the time has not come for amending the Public Health Acts there is no conceivable reason why, amid the multitudinous and minute directions as to the construction and sanitary arrangements of houses contained in the by-laws, building regulations, &c., of the county council, provisions should not be introduced requiring all pipes and cisterns to be so laid and fixed as to be beyond the reach of frost of not more than ordinary severity.

SUICIDE: ITS CAUSES AND EFFECTS.

SUICIDE and attempts at suicide are indeed becoming common. At least a dozen cases have been recorded during the past week. In considering the interesting question of inducing causes we glance almost instinctively at existing physical conditions, but we are unable to find any sufficient explanation in season or weather. It is noteworthy that of the total series reported four, and perhaps five, were associated with a drinking habit; love, so called, was held accountable in two; mental disorder, despondency, and worry filled in the list of probable causes, except in one still unexplained case. This form of offence is one which, when it is not self-avenged, courts of law do not greatly care to punish. "Discharged" is a frequent verdict in the case of those who have made unsuccessful attempts at self-destruction. Possibly this is in many instances a judicious proceeding. More in sorrow than in anger is its keynote, and sometimes pity is more just than punishment. At the same time it is well that the truly criminal and selfish aspect of suicide should not be overlooked either in law or by the eye of public opinion. The self-inflicted wound, if it be fatal, commonly injures more than it relieves. One life, distracted and cramped in its energies, perishes, but others suffer with it. Gone, with its potential usefulness, are the hope and support of wife or child, and the burden of duty unfulfilled which the suicide has abandoned settles down on friends and relations already weighted with their own. We cannot, therefore, but regard the destroyer of self and all its responsibilities as a delinquent if he have a judgment otherwise sound. To live, in however hard a battle, is his human birthright and his truest claim to the regard of his fellows. Premeditated and intelligent suicide, we may say, is always associated with some physical or moral weakness. The correction of the one lies well within the scope of our art, and the despondent man will often take firmer hold of life after a consultation with pill or draught and the devotion of a daily hour to rest. For the other there is no better stimulus than the old remedy—a fixed belief in the design, wisdom, and care of a provident Creator.

THE WORTHING WATER-SUPPLY.

AN important inquiry relative to the water-supply of Worthing was held on Friday, the 17th. inst. The corporation applied for permission to borrow £61,500, the greater part of which is to be devoted (*a*) to the construction on the Downs of a new well and reservoir to supply the borough, and (*b*) to the acquisition of the West Worthing waterworks and baths, now owned by a private company. The latter now supplies the West Ward of the borough and several outlying districts, with a total population of 2383 and a rateable value of £19,471. Of this total, 1700 population and £15,872 rateable value are within the limits of the borough, the other wards of

which are supplied by the corporation. It is proposed to buy the West Ward undertaking and abandon the wells, coupling the mains to the existing pipes in the borough supply and converting the dual into a single system. The whole of the borough and the outlying districts now supplied by both parties would then derive their water-supply from the new site on the Downs. The well on this site is already in course of construction. A depth of 80 ft. has been attained—50 ft. through loamy clay and 5 ft. of running sand; chalk comes next, broken and mixed with clay at the top. The well is enclosed in 12 ft. cylinders at the top and 10 ft. cylinders in the lower strata; the top is also bricked for some 50 ft. The depth of the well will probably be 100 ft. Water was reached at 60 ft., and some 120,000 gallons per day are now being pumped. Duplicate machinery, each set capable of lifting 1,500,000 gallons per day, is nearly ready for delivery; at present the output in the whole borough is some 700,000 gallons. A circular reservoir of brick and concrete, open, 20 ft. deep, and with a capacity of about 2,000,000 gallons, is to be commenced as soon as possible. From this a 14 in. supply main will be carried to the existing water tower in the centre of Worthing. The following are some of the principal items in the estimated cost: well, £2500; machinery and engines, £5900; buildings, £5800; reservoir, £6300; mains and connexions, £6789; site, £1203. It may be mentioned that the existing debt of the borough is £85,983, and of this sum £14,363 are estimated to be in respect of works of water-supply. The total estimate for the new works exceeds £35 000. The price to be paid for the West Worthing works has been referred to an arbitrator; it will not be less than £23,000. The idea of the authorities is to give the whole town an entirely new supply of water, rather than to acquire the income of the West Worthing Company as an investment.

THE BACILLUS OF BUBONIC PLAGUE.

THIS week we are able to place before our readers a fuller description of the bacillus of the bubonic plague, but it will be seen that the specimens transmitted to us by Dr. Lowson were typical in all respects. This, of course, was to be anticipated, as the culture was taken directly from one made by Professor Kitasato himself from a patient suffering from the plague. Although the bacillus is found in very small numbers in the blood of patients affected with the plague, it can always be demonstrated by cultivation experiments, whilst in the spleen, the lungs, the liver, the brain, and in the intestines—in fact, in all the internal organs without exception—bacilli may be found and demonstrated either under the microscope or by cultivation. Professor Kitasato has evidently studied the organism most carefully, and he is struck by the resemblance it bears to that found in chicken cholera, a resemblance that we noted in the specimens forwarded to us, as we pointed out that it was extremely like the organisms found in hæmorrhagic septicæmias, a group of which fowl cholera is a member. The smaller rodents—mice, rats, guinea-pigs, and rabbits—are all extremely susceptible to inoculation, but pigeons appear to be immune. The importance of the susceptibility of rats and mice is specially insisted upon, as both of these animals appear to be carriers of the infection in dirty quarters. Filth is the breeding-ground for the bacillus, and when we hear that many of the Chinese houses are "so filthy that they are unfit for human habitation" we are quite prepared to learn that the measures to be adopted against the plague are "general hygiene, good drainage, perfect water-supply, cleanliness in dwelling-houses, and cleanliness in the streets." The treatment of this epidemic is much the same as for any other—viz., isolation and thorough disinfection by heat, carbolic acid, and chloride of lime (these latter in strengths of not less than 2 per cent.). Professor Kitasato will continue his researches, no doubt, but he may already fairly claim that he has pointed out the way to make the bubonic plague a thing of the past. It is too much to expect that his recommendations will be carried out in all plague-stricken districts, but they certainly should be in those regions within the reach of the influence of Western civilisation.

NOTIFICATION OF SMALL-POX.

THE Vestry of St. George's-in-the-East lately summoned Mr. George Currah, of Commercial-road, E., for neglecting to notify a case of small-pox. The medical officer of health for St. George's received information of the existence of small-pox among the girls employed by a City firm. He and his assistant visited the patient in question, reported that she was suffering from small-pox, and had her removed to the hospital at Dartford. They wrote to Mr. Currah, asking why he had not notified the case. He, in reply to a second letter, explained that the history of the case had been carefully concealed by the parents, and he thought it one of chicken-pox. He had already sent one or two to the hospital which had been returned as chicken-pox. The case was evidently very mild, and the girl was not in bed a single day. The magistrate dismissed the summons, remarking that there was no reason at first to consider the case other than one of chicken-pox, and that even at the last it was of a very obscure character. We think the decision was a right one. It is almost a pity that vestries should take such cases into court. The diagnosis is difficult, and the medical man is guilty of no breach of the law if he honestly regards the case as one of the minor affection. Of course, accuracy is to be cultivated, and where there is any doubt the practitioner should take means to come to a right conclusion.

AN ACTION TO RECOVER A LARGE BILL AND ITS LESSONS.

AN action was lately brought in the Queen's Bench Division before Mr. Justice Kennedy, sitting without a jury, by Mr. Edwin Doudney against Sir Harry Stapley, Bart., as executor of the late Major W. B. Stapley, deceased, to recover fees amounting to £133 15*s.*, for attendance extending over three years. The defendant said that the charges were excessive, and tendered £70 as satisfaction of the claim. The deceased was a retired officer, affected with softening of the brain, and also suffered at times from bronchitis, influenza, and dyspepsia. In 1891 Mr. Doudney attended the deceased forty-four times, the patient liking to be frequently visited, and generally sending for Mr. Doudney and grumbling if he did not call. Clearly such a patient required frequent attendance. Visits not in the course of the round were treated as special visits. Mileage was only charged extra when the plaintiff was sent for specially. Originally he charged 5*s.* a visit and latterly 10*s.*, having told the deceased that he should have to charge him double. The bill had not been sent in for years because the plaintiff was in continual attendance, and also because the man-servant said that if it were sent in it would upset his master. The defendant made no complaint against Mr. Doudney, but thought that £70 was sufficient. Mr. Justice Kennedy, looking at the whole case, could not say that the claim made was unreasonable. His words, as reported by the *Western Mercury*, are worthy of being put on record. While admitting the reasonableness of the charges, "he thought the conduct of the plaintiff in not sending in his bill before very unbusiness-like. He saw no grounds, considering the relation of the doctor and the patient and the care he seemed to have exercised over the old man, who seemed to have no one else to look after him, to reduce the charge." He gave judgment for the plaintiff for the full amount, with costs. We entirely approve of the words of the learned judge. The reasons for not sending in

the bills yearly were unsatisfactory perhaps, but the charges were quite reasonable. The duties of a medical man towards such a patient, "with no one else to look after him," are very responsible, and this ought to be recognised by executors and friends, who do not always appreciate what medical attendance is worth to an invalid so situated.

THE DIPHTHERIA BACILLUS IN CHEESE.

IT has often been pointed out that the tubercle bacillus in the milk of cows suffering from tuberculous udders might still retain its vitality and infective power even when the milk had been converted into butter and cheese. Professor Bang, in Denmark, first proved this in connexion with butter, and since his observations several other investigators have confirmed his conclusions. Recently it has been reported to the New York Board of Health that the Klebs-Löffler bacillus has actually been cultivated from the cheese made from milk stored in a dairy farm in which a case or cases of diphtheria had occurred. Under such circumstances the diphtheria bacillus, if allowed to gain access to the cheese-making room, might find its way into the milk or cheese at any part of the process, so that any treatment of the milk itself which might interfere with the vitality of the bacillus would be of little or no avail. If this observation is correct—and there is no reason to doubt its accuracy or *bona fides*—we have actual proof of what has already been suggested and suspected, but never yet demonstrated, except in the case of the tubercle bacillus—viz., that pathogenic bacteria may frequently find a nidus and nutriment in most of the food stuffs made from milk. The New York Board of Health in this case acted with commendable promptitude, and traced and confiscated the whole consignment of cheese from the affected farm.

THREE DEATHS UNDER CHLOROFORM.

THREE general hospitals in London have been recently the scene of this sad catastrophe. A man aged thirty-one was admitted on Aug. 10th to St. Thomas's Hospital suffering from a poisoned wound of the right little finger. Chloroform was administered and incisions were made into the finger on the day of admission, when the patient took the anæsthetic well. On the following Wednesday it was found necessary to amputate the finger, and chloroform was again administered, and, as on the previous occasion, from a folded piece of lint. The patient had scarcely been placed under its influence, when his respiration became embarrassed with short, catchy, inspiratory gasps. His pulse continued good. Administration was discontinued, but he stopped breathing altogether directly afterwards. At this time the pulse could be distinctly felt at the wrist, while there was no sudden pallor of the face, which wore a dusky hue. The pupils were widely dilated. Artificial respiration was immediately begun and continued for about half an hour, and other methods of resuscitation were employed, but with no avail. The heart ceased beating very soon after the commencement of the artificial respiration. The length of time from the commencement of administration until cessation of respiration was about five minutes, and the amount of chloroform used from two to three drachms. No organic disease of the heart or other organs was detected post mortem. The right side of the heart was greatly distended with blood, and other signs of death from asphyxia were noticeable. The second case was very similar in many of its features. On Aug. 15th a healthy young man aged seventeen years went to the out-patient room of the Metropolitan Hospital suffering from an ingrowing toe-nail of the right great toe. He was advised to have an operation performed for its relief and was told to return on Saturday (18th) for that purpose. He was instructed to have nothing to eat after 7 A.M. on that morning. At 12.45 P.M. on Saturday the house surgeon proceeded to administer chloroform The patient was somewhat nervous and breathed a little shallowly in consequence, but this soon passed off, and he was "under" in ten minutes. The operation was then proceeded with by the assistant house surgeon. The incisions had only just been made when the house surgeon noticed that the patient had ceased to breathe and that his pupils were widely dilated. The dilatation took place with alarming rapidity. The administration was discontinued and artificial respiration employed immediately according to Sylvester's method. The effect of this was good, for after a few strokes the pupils contracted and the patient responded with natural inspiration. Artificial respiration was then stopped and the patient allowed to breathe of his own accord. This went on for two or three minutes and then suddenly ceased after a long jerky inspiration. The pupils became greatly dilated again, and the face livid. Artificial respiration was again proceeded with, and continued for more than one hour, but without result. Hot sponges were applied to the precordium, hypodermic injections of strychnine given, and a current of oxygen gas blown into the air passages. Enemata of brandy were also given, but at 2.15 P.M. all efforts at restoration had to be abandoned as futile. The amount of chloroform administered was five drachms and a half. On the same day a man aged twenty-nine succumbed under chloroform at the West London Hospital during a small operation upon his eye. We have not yet received details of the accident, but the heart was found post mortem to be in an unhealthy condition.

INQUIRY INTO THE MANAGEMENT OF THE HACKNEY SCHOOLS.

THE result of the Local Government Board inquiry into the management of the Poor-law schools at Brentwood has been communicated to the Hackney guardians. Though couched in careful terms and exonerating that body from intentional neglect of the duties committed to their care, the report is not wholly complimentary to them. The school committee are reported to have taken "a real interest in the welfare of the children." Events, however, have demonstrated that their interest was anything but "effective"; indeed, their control over the officers is described as "defective." The whole country was persuaded of this many months ago. We fear that the multiplication of "surprise visits" recommended in the report will not remedy the evils which led to this inquiry unless they are made, not only by "guardians," however well-meaning they may be, but also by officers thoroughly qualified by experience and training to undertake this work. The only remedy for disgraceful conditions lies in efficient supervision, a task which the guardians themselves are not qualified to undertake unless aided by competent officers. With this all the other evil conditions would tend to become ameliorated. Haphazard corporal punishment would be impossible, and the perfunctory performance of duties would in the main almost cease to exist. The inquiry has revealed "thoughtless inattention" to the wants of the children and calls for the resignation of the master and the matron, while the subordinate officers are warned that the Local Government Board look for higher things from those who have the charge of the children of the State. It is evident that the inquiry has brought to light serious delinquencies. The officers are recommended to govern the children gently and win their confidence by firm kindliness and discipline, corporal punishment being restricted to flagrant offences in the case of male children. We heartily endorse the recommendation that as much liberty outside the school premises as is compatible with reasonable discipline should be granted to the elder children.

The children are not prisoners, and demand something better than prison treatment. "The labouring men of this country have yet to learn," wrote the Founder of THE LANCET in the year 1833,[1] "that poverty is a crime, and that the 'union' bastiles of Poor-law Commissioners are institutions in any respect preferable to the old-established county jails." The whole of the present report is in the direction of amelioration, of supervision of the custodians, and of benefiting the children, by pointing out to the officers wherein their duty has been lacking. We trust the guardians will go even further than the suggestions contained in the report in the exercise of their vigilance. They have had sad lessons in the past, which we may reasonably hope will not be lost sight of in the regulation and guidance of their future action.

FRANCESCO PUCCINOTTI.

FROM Dante downwards Tuscany has been slow to put on public record her appreciation of compatriot merit, and not least has this grudging spirit been shown in her attitude towards her medical heroes. Among these there is none who has laid her under deeper obligation than Francesco Puccinotti. For many years he was her most accomplished physician, particularly in the domain of legal and State medicine, in which his exertions—literary as well as professional—brought her schools a reputation and authority extending far beyond the Italian frontier. His splendid work during successive visitations of cholera, his classic "Treatise on Medical Jurisprudence," his brilliant "Storia della Medicina," which the profession in Italy may justly claim as a contribution to that subject not inferior to those of the German Haeser or the French Daremberg, and his life-long labour in widening and intensifying the education of the practitioner by the twofold discipline of the laboratory and the clinical ward would have constituted a claim, it might be thought, to some commemoration on the part of the people in whose behalf he lived and died. But not till the 8th inst. has anything been done in Italy's "Modern Athens" to indicate her indebtedness to a citizen so noble. True, as mentioned in THE LANCET of June 23rd, his native Urbino unveiled a monument to his memory; but, beyond his having first seen the light there, that Umbrian town had none but a reflected share of the lustre he shed on Tuscany and her schools. Tardily, as is her wont, has Florence taken steps to enshrine her adopted son in the Church of the Santa Croce—the "Westminster Abbey of Central Italy"; and on the 8th inst., the centenary of Puccinotti's birth, a commemorative tablet, with an appropriate inscription by the late Professor Cesare Federici, was inserted in the wall of the left aisle. Even by this act Tuscany has by no means absolved herself of the obligation she has incurred to the "illustre scienziato"; for, setting aside the fact that the brunt of the expense has been borne by Urbino, the memorial is but a scanty acknowledgment of what she owes to him. His Excellency Dr. Guido Baccelli, Minister of Public Instruction, was approached at the conclusion of the Eleventh International Congress by a deputation interested in Puccinotti's memory, and proposals were then formulated which will one day—and that, we hope, no distant one—culminate in the institution of a worthier tribute to the great physician and man of letters than "storied urn or animated bust." A scholarship for the promotion of medical science, or even a chair for the teaching of one or other of those professional subjects on which Puccinotti has left his mark, will, it is anticipated, complete the commemorative work of which the initiation merely was started on the 8th inst. Italy, of late years especially, is not so rich in epoch-making men that she can afford to pass over in silence the exemplary and ennobling personality of Francesco Puccinotti. The inspiration of a bright and useful career is not so frequently vouchsafed her that she can withhold the inspiring influence of such a one from the youth of her "risorgimento." The academic memorial we have referred to as that best befitting the illustrious deceased is, it is reassuring to think, more certain of realisation in Baccelli's hands than in any others. Ere long, we trust, it will have become *un fait accompli*; and with such effect, moreover, as, once for all, to wipe out the reproach under which Tuscany has been content to lie—that of withholding its due meed from a life service equal to most that have been rendered her.

[1] THE LANCET, 1833-34, vol. ii., p. 667.

ACTION OF TRIONAL.

DR. OTTO BAKOFEN, in his Inaugural Dissertation,[1] gives an account of certain experiments on animals which he carried out with trional at a time when the clinical effects of this drug were not so well known as they now are. From his observations he concluded that trional acts much more quickly than sulphonal, that the sleep produced by it lasts about an hour longer, and that the animals did not become habituated to it. Only by doses which, in comparison with the sleep-producing dose in man and also in relation to the body weight of the animal, were enormous, and which besides were given continuously or with only short interruptions, was it possible to poison the animals. In the kidneys, as in the other organs, no change was found. Hæmatoporphyrinuria was never observed. In this connexion we may refer our readers to M. Vogt's observations recorded by our Paris correspondent the week before last.

[1] Neurologisches Centralblatt, Aug. 1st, 1894.

REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE LONDON COUNTY COUNCIL.

THE report of the medical officer of health of the London County Council for the year 1892 has reached us. It deals in a masterly manner with all the branches of science comprised in the term "sanitation" when applied to the conditions which exist in large towns. The administrative work of the Council is detailed in relation to almost all the subjects which are occupying the minds of sanitarians throughout the country. Wise comments are made on the purposes and extent of the London building law which the County Council has been at such pains to urge before committees of both Houses of Parliament with a very great measure of success. Problems involving the consideration of offensive trades and improper workshops have been treated in an able manner. The position of the question of the London water-supply, to which so much attention has been directed, has been concisely set forth, and the report also deals with such questions, important in their relation to medical work, as the Food and Drugs Act, the housing of the working classes, and the appointment of sanitary officers. It is gratifying to find that the Home Secretary has liberally acknowledged in the House of Commons the hearty coöperation of Mr. Shirley Murphy, the medical officer of the London County Council, with those officers who have been appointed to inspect workshops, and his readiness to inquire into all cases neglected by the local authorities. This is not the first occasion upon which the services of this officer to the State have been publicly acknowledged. The testimony of Mr. Asquith is timely, and accords with the evidences of "zeal and no ordinary ability" to be found on every page of the report now before us. So many important points of general interest are touched upon that it will be our duty to comment upon them at considerable length in future numbers of THE LANCET.

THE library and museum of the Royal College of Surgeons of England will be closed, as usual, during the whole of the month of September.

MR. WYNTER BLYTH, the medical officer of health of Marylebone, has called attention in the press to a very hard condition of affairs which can only be remedied by an assertion of the abatement of the small-pox epidemic in Portland-town as widespread as the accounts of the prevalence of the disease in that neighbourhood have been. Owing to the recent epidemic such businesses as those of the laundress, the charwoman, and the retail shopkeeper, and the trades of many who support themselves by manual labour, have been greatly affected. No one comes to buy their goods or hire their labour in the district, which still abides under grave public suspicion. Mr. Wynter Blyth wishes to lay stress on the fact that the district is now altogether free from infection, and that no fear need be felt by persons employing Portland-town labour or using Portland-town shops.

To the Italian Ministry of the Interior we are indebted for the announcement that, owing to the occurrence of cases of Asiatic cholera at Marseilles, the Italian Government has issued an ordinance "di sanità marittima," by which a rigorous medical visitation is imposed on all vessels hailing from the French seaports on the Mediterranean, while, by the same ordinance, the landing of soiled wearing apparel is prohibited, unless previously disinfected. In case of any suspicion arising as to the nature of any illness manifested on ship-board the ship in question is to be sent to a sanitary station, there to undergo the overhauling required. Besides these measures enforced by sea, there is also established a regular "servizio di vigilanza" by land—Ventimiglia being the headquarters of such "servizio"—in order to prevent the importation of infective germs.

WE learn that the terms of the investigation which is to inquire into certain parts of the Poor-law system are restricted to what may in general be described as "Pauper Schools." The term is a vague one, and does not indicate in any way what particular points require notice. The members of the committee have practically been chosen, though Mr. Shaw-Lefevre has not yet had an opportunity of communicating the names to the House of Commons. There is, as the report of the Local Government Board in connexion with the Brentwood Schools fully proves, much to inquire into regarding such matters.

WE regret to learn that Professor Aoyama, Professor Kitasato's colleague at Hong-Kong, has had a severe attack of the plague, and is even now suffering from pyæmic symptoms.

Pharmacology and Therapeutics.

SALOPHEN.

SALOPHEN,[1] which, chemically speaking, is the acetyl-paramido-phenol-ether of salicylic acid, has been used in medicine for more than two years[2] chiefly in cases of acute rheumatism and neuralgia in adults, and is now strongly recommended by Dr. Richard Drews[3] of Hamburg, not only for these affections occurring in childhood, but as an antipyretic in scarlet fever, typhoid fever, pneumonia, tuberculosis, and in the restlessness and headache accompanying the commencement of some sore-throats. Dr. Drews treated fifteen cases of acute rheumatism in children from seven to fourteen years of age with salophen, ordering from five to eight grains every two hours, or from forty-five to seventy-five grains per diem. In no case was any effect on the heart produced. Generally the pain was alleviated on the first day and completely arrested in three or four days, the temperature falling to normal and the swelling of the joints disappearing about the same time. In twelve of the fifteen cases profuse perspiration was produced half an hour after the medicine was taken, but this did not exert any unpleasant effect on the general condition, and there was never any giddiness, singing in the ears, nausea, or gastric disturbance. The inflammation never passed from one joint to another, though in two cases the swelling reappeared in three or four days in the joints which had been affected. Here a continuance of the salophen caused the symptoms to vanish in three days. The drug was also used successfully in five cases of muscular rheumatism of the neck; also in a case of purpura rheumatica in a girl fourteen years of age, where there were large purple spots on various parts of the body, and the knees and ankles were swollen and painful; there were also complete loss of appetite, great lassitude, and continuous pyrexia. The day before the attack the girl had been wet through and had sat all school time in her wet clothes. The limbs were enveloped in cotton wool, and seven and a half grains of salophen were given every two hours to the extent of seventy-five grains per diem. On the fourth day the temperature had become normal, and the spots had become lighter in colour and less tender to the touch, though a few additional smaller ones had made their appearance. In nine days all the pain, œdema, and spots had disappeared, and three days later the patient was allowed to get up. Again, similar treatment cured another girl thirteen years of age who suffered from rheumatic chorea, complicated with a slight systolic apex bruit which, together with the chorea, disappeared in twelve days. In five cases of migraine in children, where no cause such as worms or cerebral tubercle could be made out, two or three doses relieved the headache and enabled the children to return to their school work. In toothache, too, of rheumatic origin seven and a half grains of salophen effected a complete cure. It was found that the children made no difficulty about taking salophen in the form of powder washed down with water or suspended in a tablespoonful of water.

[1] THE LANCET, Jan. 9th, March 5th, and April 2nd, 1892.
[2] Guttmann: Berliner Klin. Woch., No. 52, 1891.
[3] Allgemeine Medicinische Central-Zeitung, No. 60, 1894.

DIPHTHERIA TREATED BY ANTITOXIC SERUM IN COUNTRY PRACTICE.

The value of diphtheria antitoxin in country practice is the gist of a report by Dr. Strahlmann[4] of an epidemic in Wildeshausen, a village containing about 2000 inhabitants, in the Grand Duchy of Oldenburg. From August, 1893, to July 1st, 1894, the number of cases of diphtheria was 384, of which 48 proved fatal. During the latter part of the time—that is to say, from May 14th to July 1st—all the fresh cases, 48 in number, were treated by the injection of the Behring-Ehrlich antitoxic serum. Only 3 of these cases proved fatal, 2 from general blood poisoning, due to the invasion of streptococci, and 1 from croup, for which last tracheotomy was performed. Some of the remaining 45 cases were very severe, with enlargement of the glands of the neck, fetor of the mouth, thick dirty grey exudation on the tonsils, soft palate, and uvula, and a large amount of infiltration and high fever. As a rule two cubic centimetres of the serum were injected at first and afterwards half that quantity; in severe cases the injections were repeated several times, sometimes as often as every day. The change produced was remarkable, the exudation becoming clean and white, the temperature going down, and the patient's general condition improving greatly. Subsequently the exudation peeled off. The most striking results were obtained when the treatment was commenced at the outset of a case. Here the abnormal appearances generally vanished within four-and-twenty hours. The serum was also employed in 94 cases as a prophylactic, and appeared to protect children even in the midst of infected families, though not for any very lengthened period, as some of those so protected contracted the disease from five and a half to ten weeks subsequently. The injections were made between the shoulder-blades, and in no case produced any unpleasant effects.

EFFECT OF MERCURY ON THE BLOOD.

Dr. Kozlovski,[5] who has examined the blood in ten syphilitic patients and in four healthy persons both before and after mercurial treatment, finds that though changes in the number of the red corpuscles are produced in both classes of subjects they are not definite or regular. The same may be said of the white corpuscles, and there is no

[4] Allgemeine Medicinische Central Zeitung, July 21st, 1894.
[5] Vrach, No. 16, 1894, Art. liv.

difference between the syphilitic and the non-syphilitic subjects. He found, however, that the over-mature forms of white corpuscles were increased by mercury in syphilitics but were diminished by its use in healthy persons.

CHOLERA.

THE present season naturally causes some anxiety as regards cholera, for it is now and during next month that the disease frequently manifests itself with force, and an epidemic usually gives signs of increase and extension in the event of its advancing. Notwithstanding that this is the third year of prevalence of the present epidemic in Europe, and that it seems to have acquired a firm foothold in certain parts of the Continent and is still slowly extending itself, we think that this country, at any rate, is to be congratulated on the course which events have so far taken. The situation must, as we have said, be read in connexion with the advancing season and the prevailing meteorological conditions, and these are, so far as they go, inimical to any rapidly progressive advance and development of the epidemic.

Summarily expressed, we may say there has been a revitalisation of the disease in Russia, Poland, and adjoining districts of Austro-Hungary and Germany, and in other countries also. This year cholera has extended (and firmly established itself, apparently) in Eastern and Northern Galicia, and outbreaks, more or less severe, or cases more or less numerous, have been reported in European Turkey, in Germany, from towns and villages on the Vistula, and in Sweden, Belgium, Holland, and France. As regards the latter country it must be borne in mind that the local development of cholera and its endemic prevalence in the vicinity of Paris was one of the very earliest facts connected with the medical history of the present epidemic, about which but little was said at the time, nor have its exact origin and causes been hitherto satisfactorily accounted for. The reticence shown by the French authorities has been maintained throughout, but we know that undoubted cases of the disease or its congeners have been reported from time to time under their true name, or some of its pseudonyms, in various departments of France and in seaport towns like Marseilles and Bordeaux.

Since our last week's chronicle we have—according to a report from Vienna of the 17th inst.—official returns of the occurrence of 253 cases and 161 deaths and of 54 cases and 28 deaths in Galicia and Bukovina respectively in two days. Later official returns show that cholera is still prevailing in those districts up to the present time at very much the same rate; indeed, the disease shows signs of increasing instead of abating, and it is said to be of a virulent type, the number of deaths to attacks being excessive. At Czernovitz, the capital of Bukovina, the ignorant lower classes unfortunately entertain the ridiculous idea that the medical practitioners poison the patients, and this has naturally led to a concealment of cases and to ill-feeling against members of the medical profession. The disease prevails very extensively in the provinces of Galicia and Bukovina, and it is feared that it may be spread into Moravia and Silesia by Galician troops taking part in the forthcoming military manœuvres in Bohemia.

Cholera is more or less prevalent at Amsterdam, Rotterdam, Maastricht, Haarlem, Wormerveer, Purmerend, Kolhorn, and other places in Holland. There have been altogether 35 cases and 15 deaths in Amsterdam.

It is reported from Constantinople that cases of choleraic disease have reappeared at Scutari, where an outbreak occurred last summer.

There is little intelligence of importance from Berlin regarding the presence of cholera in Germany. Professor Pfeiffer and some of the members of Koch's Institute have gone to the Prusso-Russian frontier to investigate the state of affairs there. The German Office of Health and the Cholera Commission, with Professor Koch, are actively engaged in deliberating as to the expediency of adopting any fresh precautionary measures.

The epidemic still continues in Russia. The notification of the appearance of cholera at Nijni Novgorod, where there have been 60 cases, may prove important, seeing that the fair is being held there.

In order to fill up and complete our serial picture, as it were, of the present aspect of cholera, we may here advert to the latest intelligence from India regarding the progress of the disease there, for it seems to illustrate one fact in regard to cholera—viz., the influence of season. And here we may remark, *en passant*, that a cholera epidemic in India, as is well known, does not proceed in the course of the rivers, but against them. The rivers, of course, flow downwards from the snow-clad hills of the Himalayas to the plains, whereas an epidemic of cholera invariably travels the reverse way in that country, whatever it may do elsewhere. This is the season for the manifestation of cholera outside and beyond its endemic area in Bengal, and we learn from the Anglo-Indian papers that, some cases having occurred in the Royal Irish Fusiliers, at Allahabad, that corps has been moved out into a cholera camp on the Jubbulpore line; that a severe outbreak of cholera has occurred in the city of Cawnpore; that the Deputy Commissioner at Unas died of cholera after three hours' illness; that sporadic cases of the disease have made their appearance in various cantonments of the North-West Provinces and Oudh; that several cases of cholera have occurred in Lucknow and also at Belgaum Fort; and, lastly, that a severe outbreak is reported as having occurred at one of the large civil hospitals in Bombay, the exact origin of which has not yet been traced.

It remains to add a few words in regard to the facts connected with the alleged cases of cholera in this country. We have nothing to add about the ship *Balmore*, except that the men who were suffering from choleraic diarrhœa have quite recovered and been discharged. A case of supposed cholera (attacked on the 12th inst.) was removed to the Gravesend hospital from a ship which left St. Petersburg on the 6th and Cronstadt on the 7th inst. A death from supposed cholera was reported as having occurred during the voyage of the steamer *Harrogate* from St. Petersburg to the Tyne, where the vessel arrived last Saturday; the remainder of the crew were quite well. There is no truth in the reported detention of a vessel from the Black Sea at the port of Harwich on account of cholera on board.

As regards the fatal case of supposed cholera at Battersea, the medical officer of the Local Government Board has promulgated the results of the bacteriological investigation made by Dr. Klein, who reports that, whilst to the naked eye the pathological appearances were typical of cholera, the microscopical and culture results obtained were altogether negative as to the existence of cholera. From this it may be inferred that Dr. Klein now considers that the presence of Koch's comma bacillus is the only reliable evidence of cholera, and the public generally, and the profession in particular, would, we imagine, be glad to know precisely whether this inference be correct.

The metropolitan sanitary and vestry authorities, we notice, have issued special sanitary instructions for householders, and notified the hospital and other arrangements that have been made for any cases of cholera that may hereafter appear. We would direct our readers' attention to the article by our special correspondent in the present number of THE LANCET descriptive of the results of his personal investigations and inquiries during his recent visit to Hamburg.

It may be useful and pertinent here to make a few explanatory remarks. The different behaviour of Hamburg and Altona during the late cholera outbreak was a very striking and interesting matter, seeing that the difference was attributed altogether to the different water services of the two places. Those people supplied from the Altona source escaped the epidemic, whereas the Hamburgers suffered severely from it, the Hamburger-Platz forming a sort of boundary line, the inhabitants of which square, although on the Hamburg side of it, obtained their water from the Altona supply and did not suffer from cholera. Both Hamburg and Altona derive their water-supply from the Elbe, the latter from apparently the worse position as regards the risk of sewage contamination; but the Hamburg supply was delivered direct from the depositing tanks into the city, while the Altona supply was subjected to filtration through sand and gravel filter-beds. The cause of the immunity of Altona was regarded by Professor Koch, however, as attributable in reality to the formation and presence of a slimy coating—"Schlamm"—composed of an admixture of Elbe mud, organic matter, and micro-organisms, and deposited on the surface of the sand-filter.

The *Times* correspondent reports from Berlin on the 21st inst. that isolated cases of cholera occur in the province of East Prussia, chiefly in the district of Lansberg. At the village of Niedzwedzen, in the district of Johannisburg, there had been 67 cases and 21 deaths up to Sunday last.

A VISIT TO HAMBURG.[1]

(BY OUR SPECIAL CORRESPONDENT.)

THE VARIOUS CAUSES OF CHOLERA.—THE IMMUNITY OF ALTONA.—THE HARBOUR.—THE WATER-SUPPLY.—THE SEWERS.

IN spite of the great cholera epidemic of 1892 it must be acknowledged that the sanitary condition of Hamburg has improved. Though the population has increased the death-rate has fallen, as the following official figures show :—

TABLE I.—*Death-rates per 1000 of the Population of Hamburg from 1871 to 1892.*

Year.	Per 1000.	Year.	Per 1000.	Year.	Per 1000.
1871	37·1	1879	26·5	1887	27·1
1872	26·7	1880	25·5	1888	25·3
1873	30·3	1881	24·8	1889	23·9
1874	27·0	1882	24·5	1890	22·3
1875	28·5	1883	25·9	1891	23·6
1876	24·9	1884	25·8	1892	39·8
1877	25·8	1885	26·1		
1878	26·8	1886	29·4		

In the year 1871 there was an epidemic of small-pox, which was attributed to the presence of a large number of French prisoners in the town. In 1873 there was an epidemic of cholera, and in 1886 an epidemic of typhoid fever. These figures show that while the population continued to drink the unfiltered water of the Elbe the mortality was reduced. Nevertheless, the connexion between the contaminated waters of the Elbe and, I will not say the existence, but the spread, of cholera is distinctly marked. The epidemic began among those who were most exposed to contact with this water, and there was a larger proportion of cases among the river and harbour population. New docks were in course of construction in 1892. Men worked all day long standing in the water, and it was among this population that the greatest number of cases occurred. In the districts of Veddel there were 118·98 cases and in the Peute and Kalte-Hose districts there were 140·20 cases per 1000 inhabitants. In no other part of Hamburg did the proportion of cases reach anything like these terrible figures. These fatal districts are to the south of the Elbe. Immediately facing them on the northern banks of the Elbe is the Billwärder-Ausschlag quarter, and here the largest number of cases occurred, but they only amounted to 40·13 per 1000. It is, however, most important to note that, though the labourers who toiled in the water and the mud of the banks of the river readily fell ill, the proportion of mortality was much lower than in the other districts. Thus, in the Veddel districts the 118·98 cases resulted in only 27·50 deaths, and the 140·20 cases in the two other neighbouring districts produced only 25·13 deaths per 1000 of the population. Though these figures constitute the highest death-rate from cholera of any district of Hamburg they are much smaller than what might have been expected, considering the number of cases. For instance, in the Billwärder-Ausschlag quarter, where, as already mentioned, there were 40·13 per 1000 of cases, there were 24·16 deaths per 1000. Undoubtedly this enormous difference in the number of cases is due in part to the exceptional energy of the medical men in reporting all cases. It is a known fact that more activity was displayed in this respect than usual in the three districts where so many cases were recorded. This alone, however, does not suffice to account for so marked a difference in the figures. I should feel inclined to conjecture that as in these districts many men were constantly working in the water they could scarcely avoid being more or less poisoned. The frequency of this poisoning was due to the nature of their employment, hence it is that there were so many cases. The effect, however, that the poison would have upon them would depend upon the constitutional strength of each individual and upon the sanitary conditions of his home and general life. This brings us back to figures that do not differ in so startling a manner from those of other districts, for the death-rates, though very high—25·13 and 27·50 per 1000—are not so very much greater than those of other bad districts. It was among the labourers working in the Free Harbour, who were constantly wet with the waters of the Elbe, that the first cases of cholera occurred. Though throughout the town this water was being consumed, it would seem as if the nature of the employment as well as the contamination of the water determined the first cases.

The disease, then, spread principally where the soil was damp and among the floating population. It thus seems that the mischief was aggravated where people not merely drank the water but lived on the water or on soil saturated with it. In THE LANCET of July 7th statistics setting forth the greater number of cases and deaths which occurred on damp soil are given. The population at Hamburg living on board ships and barges during the cholera epidemic was set down at 4552, and among this population there occurred 387 cases and 171 deaths from cholera. The number of cases per 1000—namely, 82·8—was therefore not so high as in the districts where so many labourers worked in the water at the building of new docks; but the number of deaths per 1000 (37·56) was much higher. Then, in respect both to the number of cases and of deaths, the proportion of those who suffered was much larger among those who lived on shipboard than among the general population living on shore. Of cases occurring on shipboard, the principal victims were those who slept in barges. There were only 83 cases and 46 deaths among persons who were living on sea-going ships. This was due to the fact that greater precautions and care are taken with respect to the supply of drinking water to ships. Then the hygienic conditions on sea-going ships are very much better than on barges, and the decks of the ships are higher up and away from the water. Men on board a big ship cannot so easily reach and touch the water. It has been said that the population living on board ships and barges helped to spread the disease on shore, but this has been in no wise demonstrated. Then it is argued that the men who worked in the docks, on board ships and barges, but who slept on shore, spread the disease in the town. Again this assertion is not proved by demonstration. Cholera, when it broke out in a family of dock workers, generally began with the children, and not with the father or the brother who worked at the docks. Of 539 cases recorded where two persons in a family suffered from cholera, in 266 cases the first to fall ill was a child; in 176 cases an adult was the first to suffer; in 46 cases an adult and a child were seized simultaneously; in 25 cases registration of the cases was made on the same day without any record as to who was the first to suffer; and in only 26 cases the disease spread from one to another adult. From this it would seem that the constitution of the individual and the condition of the abode, especially the sleeping room, are the chief ruling factors. Sailors and bargemen, living cooped up in small cabins and breathing the misty air from the surface of the Elbe, supplied the largest number of cases and the highest proportion of deaths. A cholera map of the harbour would be most instructive. In the harbours of Dunkirk, Calais, and Dieppe I found that the ships where cases occurred on board were moored close to sewer outfalls. It would be very useful to have a map of the harbour of Hamburg giving the position occupied by the various infected ships and the various sewer outfalls.

On shore the attacks of cholera were most frequent in the damp, unwholesome, overcrowded courts and alleys, and there were more victims among the children who were mostly living in these unhealthy homes than among the men who worked in the port and were most in contact with the Elbe water. It should also be noted that the occupants of the lunatic asylum, though not especially exposed to the influence of contaminated waters, were especially susceptible to the disease. In the Friedrichburg Lunatic Asylum there were 123 cases and 64 deaths, or cases in the proportion of 90 per 1000 and deaths at the rate of 47 per 1000 inhabitants or inmates. If such asylums contained the same proportion of children as exists in the general population then the number of cases would have been much greater. The fact that the inhabitants are mainly adults renders their susceptibility to cholera much more significant. It was also found at Hamburg that negroes were very liable to contract the disease. The principal victims of the epidemic were children, negroes, and lunatics. Of course, at Hamburg, as elsewhere, drunkards were very numerous among the victims of the epidemic. During the small epidemic that occurred subsequently—that is to say, in November, 1893—the cases were distributed much in the same manner as during the great epidemic. Out of the seventeen persons who died from cholera in November, 1893, five were drunkards and two were negroes, one was a prisoner, and the other victim was a fireman on board a very dirty Spanish

[1] The first part of this article was published in THE LANCET of July 7th.

ship. Of the seventeen, only three were living in anything like decent circumstances. The mortality among men without any fixed employment was much greater than that of the general population, and the same may be said with regard to stokers and firemen on board ships. Thus it is the mode of living, the nature of the employment or want of employment, the character of the subsoil, the drainage, the sanitary conditions of the domicile, and the constitutional condition of each person that are the governing factors in the spread of cholera, and this is further demonstrated if Altona is compared with Hamburg.

Altona is simply a continuation or suburb of Hamburg, but under a different municipality. It is what Salford is to Manchester or West Ham to London. Yet Altona was remarkably free from cholera during the great epidemic at Hamburg; but it has gone forth throughout the world that Altona filtered its drinking water, while at Hamburg the Elbe waters were not filtered. A story is also related of some square where the houses are identical in almost every respect, and only differ in so far that on one side of this square, being in Hamburg, the inhabitants drank unfiltered Elbe water, while those on the other side belonged to the municipality of Altona and therefore received filtered Elbe water. Then follows a description of the havoc wrought by the epidemic on the Hamburg side of the square, while total immunity was enjoyed by the inhabitants on the Altona side. This is a pretty story—it points so clearly to the moral by indicating that bad water becomes harmless if it is properly filtered. Unfortunately, the cholera problem cannot be solved so easily; and when in Hamburg itself I soon found that the story of this wonderful square was a myth. All the officials whom I questioned on the subject smiled benignly at me, and seemed much amused by the legends that had arisen out of the Hamburg epidemic. The square in question does not exist at all. The most that can be said is that the frontier line between Hamburg and Altona is irregular, and that at a portion of its course where it forms a sort of obtuse angle the cholera map shows a greater number of cases on the Hamburg side. Looking at the map as a whole, the difference between the Altona and Hamburg sides of the partition or boundary is most marked and striking, and at the angle in question the difference is particularly well defined. But there is a shading off, and no distinct wall-like line. The dots showing the habitations of persons who died from cholera become less frequent and farther apart as Altona is approached; but they do not stop at the Altona boundary, they overlap the frontier line and appear on the Altona side. If the epidemic was due solely to the water-supply it would stop as before a wall when it reached the boundary of Altona. It does nothing of the sort; the prevalence of cholera, the intensity of black spots on the map, gradually lessens as the high, dry, and well-drained ground of Altona is approached. A great portion of Altona is built on a hill. Hamburg lies at the foot of Altona in damp, low ground, and there are also a beautiful park and a hill studded with trees which separate a portion, St. Pauli, from the most seriously infected districts of Hamburg. On the other hand, however, there is a part of Altona which is low-lying and damp, and here there were a good many cases of cholera. If one looks at the cholera map of Hamburg it will be seen that Altona is to the west, and that the worst cholera districts are to the east of the town. While the easterly districts of Hamm-Marsch and Billwärder show death-rates from the disease of 39·38 and 40·13 cases and 21·37 and 24·16 deaths per 1000 inhabitants, the westerly districts of Eimsbüttel and St. Pauli, which touch Altona, had 18·54 and 25·05 cases of cholera and 10·75 and 12·56 deaths per 1000. Thus there is a decrease of cholera on the Altona side of Hamburg itself. Nevertheless, the contrast between Hamburg and Altona remains most marked, because there were at Altona only 3·47 cases and 2·13 deaths from cholera recorded per 1000 of the population. But the immunity of Altona during the last epidemic is no exceptional circumstance. Altona has always been freer from the disease than Hamburg. Cholera has never developed at Altona with the same intensity as at Hamburg. This was already noted in 1831, and in those days there was no difference in the water-supply. Both at Altona and at Hamburg unfiltered water was drunk. The following are the official figures, taken from the Hamburg Medical State Statistics, of the various cholera epidemics, and they show that when there has been anything like a serious prevalence of the disease Altona has suffered but little as compared with Hamburg:—

TABLE II.—*Comparison of Cholera Epidemics in Hamburg and Altona.*

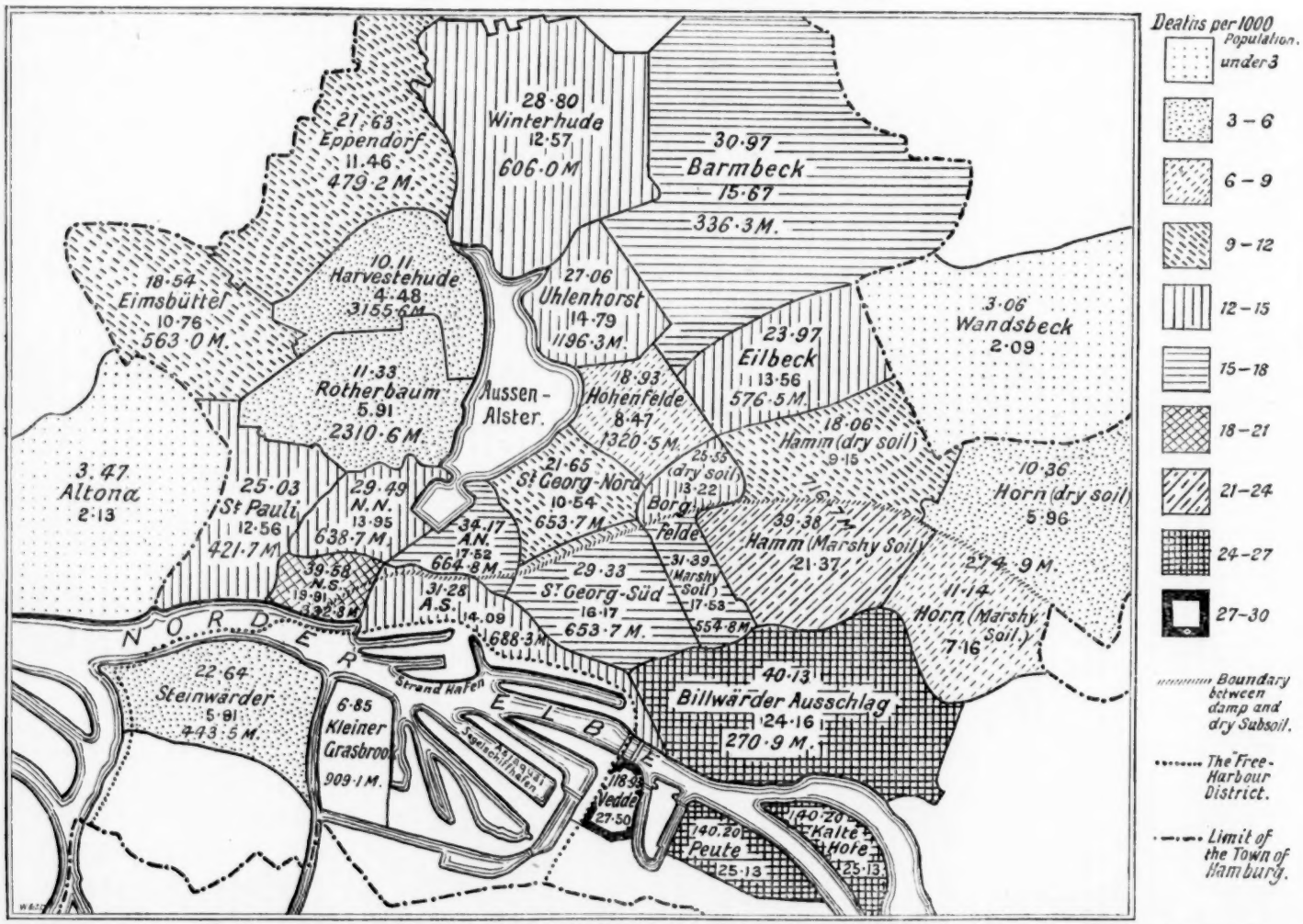
Year and town.	Population.	Cases.	Proportion of cases per 1000.	Deaths.	Proportion of deaths per 1000.	Epidemic began.	Epidemic ended.
1831 Hamburg	145,363	937	6·4	498	3·4	Oct. 5th, 1831	Feb. 2nd, 1832
1831 Altona	25,000	23	1·2	15	0·5	Oct. 14th, 1831	Nov. 6th, ,,
1866 Hamburg	214,174	2254	10·5	1158	5·4	June 30th, 1866	Oct. 22nd, 1866
1866 Altona	60,000	132	2·2	82	1·4	July 19th, ,,	Oct. 19th, ,,
1867 Hamburg	221,160	—	—	15	—	July, 1867	Nov., 1867
1867 Altona	67,350	57	0·9	44	0·7	Nov. 6th, ,,	Dec. 25th, ,,
1871 Hamburg	325,232	171	0·5	101	0·31	Aug. 1st, 1871	Sept. 22nd, 1871
1871 Altona	74,102	—	—	105	1·5	Aug. 3rd, ,,	Sept., ,,
1873 Hamburg	348,127	1729	4·7	1005	2·7	June 14th, 1873	Nov. 8th, 1873
1873 Altona	80,000	145	1·7	102	1·2	July 16th, ,,	Dec. 24th, ,,

In face of the importance sometimes attributed to the question of water-supply the above figures are very instructive. They show that Altona was comparatively free from the disease before its waters were filtered. Though contaminated water is probably the most effectual of all means for spreading cholera, it would be a very mischievous error to imagine that Hamburg has become a safe town because its supply of drinking-water is now carefully filtered. This alone will not suffice to place Hamburg in the same favourable position as that enjoyed in the greater part of Altona. The authorities of Hamburg deserve great praise for the energy with which they at once set to work to supply the most obvious need of the town—a purer provision of water; but it cannot be said too often that this, by itself, does not suffice.

The new waterworks were completed in May, 1893, though in September, 1892, they had not been commenced. Four thousand men were employed night and day, and thus the work, regardless of expense, was hastened forward. The water is now taken at a point much higher up the river—that is to say, further from a possible backwash, bringing with it water from the sewer outfall. The distance from the old intake is 2400 metres. Formerly the water was pumped into a set of tanks on the mainland close to the town, and after it had been allowed to settle for a little while was delivered to the houses in the town without undergoing any filtering process. That such water should have been contaminated by the sewers, the sewage being brought from the sewer outfalls to the water intake by the rising tide, was most probable. The specific cholera germs might have been introduced into the water by sewage contamination, by the drainage from the ships in the harbour, or by the encampment of Russian emigrants on the banks of the river. Then the disease spread throughout Hamburg; but it would be dangerous to conclude that it was due merely to the contamination of the water. The numerous facts given above show that there were many other causes at work, and that where these other causes were absent the contaminated water alone either did not cause any attacks or only a few cases of cholera. Now the water of the Elbe, taken at a safer and greater distance from the town and its sewer outfalls, is pumped on to an island in the Elbe. Here it remains for twenty-four hours in the newly constructed tanks. Ordinary sand filters are used, measuring in all 137 000 square metres and filtering at the rate of one and a half metres per square metre of surface in the twenty-four hours. Actually from 120,000 to 130,000 cubic metres of filtered water are supplied to the town of Hamburg per day. In August, 1892, during the cholera epidemic, so as to ensure the efficient flushing of the closets, as much as 280 litres of

DISTRICT CHOLERA MAP OF HAMBURG 1892 EPIDEMIC.

DISTRICT CHOLERA MAP OF HAMBURG 1892 EPIDEMIC.


Deaths per 1000 Population.
under 3
3 – 6
6 – 9
9 – 12
12 – 15
15 – 18
18 – 21
21 – 24
24 – 27
27 – 30
Boundary between damp and dry Subsoil.
The Free-Harbour District.
Limit of the Town of Hamburg.
28·80 Winterhude 12·57 606·0 M
21·63 Eppendorf 11·46 479·2 M.
30·97 Barmbeck 15·67 336·3 M.
18·54 Eimsbüttel 10·76 563·0 M.
10·11 Harvestehude 4·48 315·6 M.
27·06 Uhlenhorst 14·79 1196·3 M.
3·06 Wandsbeck 2·09
23·97 Eilbeck 13·56 576·5 M.
11·33 Rotherbaum 5·91 2310·6 M.
Aussen-Alster.
18·93 Hohenfelde 8·47 1320·5 M.
18·06 Hamm (dry soil) 9·15
3·47 Altona 2·13
25·03 St Pauli 12·56 421·7 M.
29·49 N.N. 13·95 638·7 M.
21·65 St Georg-Nord 10·54 653·7 M.
25·55 (dry soil) 13·22
Borgfelde
10·36 Horn (dry soil) 5·96
34·17 A.N. 17·82 664·8 M.
39·38 Hamm (Marshy Soil) 21·37
39·58 N.S. 19·91 332·3 M.
29·33 St Georg-Süd 16·17 653·7 M.
31·39 (Marshy Soil) 17·53 554·8 M.
274·9 M.
31·28 A.S. 14·09 688·3 M.
11·14 Horn (Marshy Soil) 7·16
NORDER ELBE
Strand Hafen
40·13 Billwärder Ausschlag 24·16 270·9 M.
22·64 Steinwarder 5·91 443·5 M.
6·85 Kleiner Grasbrook 909·1 M.
Segelschiffhafen
18·35 Veddel 27·50
40·20 Peute 25·13
40·20 Kalte Hofe 25·13

Note.—The upper figure represents the number of cases of cholera per 1000 inhabitants of the district; the lower number the proportion of deaths per 1000; the lowest and largest figure represents the average annual income in marks.

the then unfiltered water were supplied per head per day. Now the supply of filtered water is equal to about 220 litres per day. The water is raised, as formerly, into a water tower, and thence reaches the houses by the force of gravitation. The bacteriological examinations show that the filtering process is satisfactory and efficacious. So it may be at once acknowledged that the cholera epidemic has brought about at least one great improvement—Hamburg has now filtered water to drink; but there remain yet untouched the grave problems of the housing of the poor and the general drainage of the town.

The old main sewers of Hamburg were intended to drain away the subsoil waters. Consequently they are not impervious, and if they drain away some of the subsoil waters they also contaminate those waters by allowing the sewage to escape into the surrounding ground. Many of the sewers are of brick, and are therefore porous, and some are absolutely horizontal—that is to say, utterly devoid of fall. Fortunately, the lake—the Aussen-Alster—and the stream called the Bille are some four metres above the lowest levels of the town, so that by discharging some of their waters into the sewers these can be easily flushed. The sewers vary in size from 3 metres to 0·57 by 0·86 metre in diameter. The latter, the smallest sewers, can therefore be cleaned out by hand. The sewers are ventilated by the rain-water pipes, but as there is no system of inspection in force to ensure the proper trapping of the house drains there must be many escapes of sewer air inside inhabited houses. Then there are storm overflows into the Alster; thus the foulness of the sewers not only contaminates the river and harbour, but also the beautiful inland lakes that are surrounded by luxurious villas and much frequented by pleasure boats.

In conclusion, therefore, Hamburg requires a general scheme of drainage, so that the town may have watertight and self-cleansing sewers; and, above all, Hamburg needs new by-laws, energetically applied, under which medical officers and sanitary inspectors may see that all drains are properly trapped and ventilated, that no house is overcrowded, and that all old insanitary property is pulled down and wholesome dwellings built in its stead. Till this is done the greatest port of Germany will continue to be exposed to the danger of yet another cholera epidemic.

THE ASSOCIATION OF BRITISH POSTAL MEDICAL OFFICERS.

THE annual general meeting and conference of this association was held at the Hôtel Métropole, London, on July 6th last, under the presidency of Mr. Frank Iliffe, when there was a large attendance of members.

The annual secretarial report was presented by Dr. R. Ritchie Giddings, the hon. general secretary, and, having been read, was adopted upon the proposition of Mr. Henry Fitz-Gibbon, seconded by Mr. Bertram Thornton. It indicated that the present position of the association is an eminently satisfactory one, as its membership already consists of a large proportion of the postal medical officers of the United Kingdom, and especially of those located in its most important towns—e.g., Manchester, Liverpool, Newcastle-on-Tyne, Glasgow, Edinburgh, Dublin, Belfast—and many in the metropolis &c. It further reviewed the origin of the association and its special purpose, which is the bringing of a large number of professional men into touch with one another who hitherto have had an isolated official existence, although engaged in a common work, thereby facilitating their taking counsel together upon topics possessed of special interest to them as a body, while at the same time seeking to engender good fellowship between them. After having referred to the fact that apparently such an association has long been a recognised requirement amongst postal medical officers, as evidenced by so large a proportion of those whose responsibilities are the greatest having attached themselves to it, it briefly alluded to the magnitude of the loss which the postal service has sustained by the recent decease of Sir A. Blackwood. A report was then presented by Mr. Henry Fitz-Gibbon, hon. secretary to the association in Ireland, which, having been read, and, upon the proposition of Dr. Dougan, seconded by Mr. Walter Pratt, having been adopted, pointed out that the medical officers in all the important centres of his portion of the kingdom had now become members of the association, whilst a statement by Dr. William Dougan, hon. secretary to the association in Scotland, recorded that a similar condition of affairs existed there. Later the audited financial report, which showed that the association's finances are quite satisfactory, having been presented, was adopted upon the proposal of Mr. Matthew Halton, seconded by Mr. Albert Peacock. The code of rules of the association came next under consideration and upon the moving of Mr. Peacock, seconded by Mr. Halton and supported by Messrs. Thornton, Dunn, Moone, Goss, Parnell, Dr. Paramore, and others, was provisionally adopted and ordered to be printed and circulated among all the members.

The meeting then proceeded to the election of an executive for the ensuing year, when it was unanimously agreed, upon the motion of Mr. Peacock, seconded by Dr. Walton Browne, that the whole of the previous executive should be requested to continue in office, and, on the proposal of Mr. Halton, seconded by Mr. Fitz-Gibbon, that Dr. J. Walton Browne should be elected to fill the vacancy in the committee caused by the resignation of Mr. Wright. It was also agreed unanimously, on the proposition of Dr. Giddings, seconded by Dr. Paramore, that Dr. John Watson, of Manchester, should be the vice-president for the ensuing year.

The meeting subsequently devoted itself to the discussion of several technical departmental topics possessing a special interest to those present. The question of alcoholism amongst postal employés was considered, and a resolution was unanimously adopted avowing the determination of members to assist the Postmaster-General, so far as lay in their power, in his endeavours to eradicate it wherever it might be found to exist.

The recent suggestion that Post-office buildings should be subject to the inspection of local sanitary authorities was also under discussion, and although the opinions of members were very strongly antagonistic to any such practice being legalised it was deemed to be unnecessary at the present that the association should take any definite steps in the matter until it became apparent that there was some probability of these suggestions being acted upon.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Birmingham Urban Sanitary District.—The population of Birmingham is rapidly approaching half a million, the estimation for the middle of 1893 having been 487,897. The general death-rate for the year was 21·5 per 1000, a rate higher than any recorded within recent years. This excess was in large part due to the high mortality from diarrhœa. Dr. Alfred Hill expresses his regret that the gradual decrease in the death-rate of the city which manifested itself between 1874 and 1888 has not been maintained. In commenting upon the relation between diarrhœa and general insanitary conditions, more especially collections of filth, Dr. Hill calls attention to the large number of ashpit privies still existing in Birmingham, and he remarks: "I fear that until these cardinal points of sanitation receive due attention there is little prospect of such an amelioration of the public health as to materially affect the present death-rate." These remarks seem to raise questions as to whether the opening sentence of an article in one of the current monthly magazines, that "municipal reformers look to Birmingham as the eyes of the faithful are turned to Mecca," is exactly applicable. Although the general death-rate was high, that from diphtheria was one of the lowest recorded since 1886, being but 0·09 per 1000 living. As regards small-pox and vaccination, the following table is of interest:—

Ages.	Vaccinated.			Unvaccinated.		
	Cases.	Deaths.	Case-mortality per cent.	Cases.	Deaths.	Case-mortality per cent.
Under 1 year	0	0	—	14	6	43
Between 1 and 5 years ...	6	0	—	21	12	57
,, 5 and 15 ,, ...	101	0	0	34	2	6
,, 15 and 25 ,, ...	358	6	2	18	4	22
,, 25 and 45 ,, ...	316	22	7	16	7	44
,, 45 and 65 ,, ...	58	8	14	1	0	—
At 65 years and upwards...	8	2	—	1	1	—

The next table is also of interest, and has reference to the average number of days spent in hospital by the vaccinated and unvaccinated.

	Average number of days in hospital.
All vaccinated cases	30
Cases with one mark	34
,, two marks	33½
,, three ,, ...	29¼
,, four ,, ...	28
,, five ,, ...	26½
Unvaccinated cases	50

There seems to have been an exceptional incidence of small-pox in the area surrounding the Small-pox Hospital, and Dr. Hill states that this has been regarded by some as a conclusive proof of the aerial spread of the disease. He, however, does not take this view, and seems to think the fact that the tramp ward of the workhouse is near the Small-pox Hospital is a sufficient explanation of this increased incidence. He adds, too, that "the workhouse, the asylum, and the gaol, the first only a few yards, the second 500, and the third 550 yards distant from the Small-pox Hospital, have escaped with so few cases of the disease that it is reasonable to conclude that they were the results of infection through ordinary channels and were not due to the hospital. Only 33 cases occurred in the workhouse during the year, 2 in the asylum, and 1 in the gaol." Having regard to the very great interest which is now being evinced in the influence of small-pox hospitals, it is to be regretted that Dr. Hill did not publish in his report a spot map showing the distribution of small-pox cases, more especially so as the spots could have been easily added to the spot map already given of diphtheria, scarlet fever, and enteric fever. The Small-pox Hospital seems exceptionally well situated for accurate observation, as a canal runs on one side, which would considerably facilitate the elimination of personal intercourse. As regards the incidence on the public institutions referred to, it would have added to the interest of the observations had all the facts as regards vaccination, visiting, &c. been given, as also some information as to the direction of the prevailing wind at or about the time when the aggregations of acute cases were present in this hospital. The workhouse, the institution nearest the hospital, certainly suffered heavily, more especially when the facilities for observation, vaccination, and isolation which would obtain there are taken into account. However, we believe that Birmingham has now obtained a separate site for a small-pox hospital, well removed from any aggregation of population.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6508 births and 3526 deaths were registered during the week ending Aug. 18th. The annual rate of mortality in these towns which had increased in the preceding five weeks from 15·9 to 17·6 per 1000, was again 17·6 last week. In London the rate was 17·1 per 1000, while it averaged 17·9 in the thirty-two provincial towns. The lowest rates in these towns were 10·7 in Plymouth, 11·6 in Cardiff, 11·8 in Halifax, 12·0 in Swansea, and 12·1 in Derby; the highest rates were 20·8 in Wolverhampton, 23·3 in Salford, 30·4 Preston, 30·6 in Sunderland, and 30·9 in Liverpool. The 3526 deaths included 721 which were referred to the principal zymotic diseases, against 639 and 752 in the preceding two weeks; of these, 442 resulted from diarrhœa, 71 from measles, 70 from diphtheria, 69 from whooping-cough, 36 from "fever" (principally enteric), 28 from scarlet fever, and 5 from small-pox. These deaths caused the lowest rates in Plymouth, Swansea, Oldham, and Gateshead, and the highest rates in Leicester, Liverpool, Salford, Preston, and Sunderland. The greatest mortality from measles occurred in Halifax, Bristol, and Sunderland; from whooping-cough in Preston, Norwich, Swansea, and Huddersfield; from "fever" in Liverpool and Salford; and from diarrhœa in Burnley, Sheffield, Sunderland, Liverpool, Leicester, and Preston. The 70 deaths from diphtheria included 57 in London and 2 in West Ham. Four fatal cases of small-pox were registered in London and 1 in Plymouth, but not one in any other of the thirty-three towns. There were 179 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 18th inst., against 207, 215, and 209 at the end of the preceding three weeks; 37 new cases were admitted during the week, against 152, 40, and 28 in the preceding three weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2132, against 2197, 2221, and 2193 on the preceding three Saturdays; 182 new cases were admitted during the week, against 259 and 208 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 144 and 151 in the preceding two weeks, declined to 145 last week, and were 33 below the corrected average. The causes of 60, or 1·7 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Cardiff, Bradford, Sunderland, Newcastle-on-Tyne, and in eight other smaller towns; the largest proportions of uncertified deaths were registered in Norwich, Salford, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 16·3 and 15·6 per 1000 in the preceding two weeks, further declined to 14·6 during the week ending Aug. 18th, and was 3·0 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 8·6 in Perth and 12·1 in Edinburgh to 15·8 in Greenock and 17·4 in Dundee. The 415 deaths in these towns included 20 which were referred to diarrhœa, 10 to whooping-cough, 7 to diphtheria, 4 to measles, 3 to scarlet fever, 3 to "fever," and 1 to small-pox. In all, 48 deaths resulted from these principal zymotic diseases, against 65 and 69 in the preceding two weeks. These 48 deaths were equal to an annual rate of 1·7 per 1000, which was 1·9 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 20 and 39 in the preceding two weeks, declined again to 20 last week, of which 14 occurred in Glasgow. The 10 deaths from whooping-cough exceeded by 2 the number in the preceding week, and included 4 in Glasgow, 2 in Edinburgh, and 2 in Aberdeen. The fatal cases of diphtheria, which had been 12 and 3 in the preceding three weeks, rose again to 7 last week, of which 4 occurred in Glasgow and 2 in Dundee. The 4 deaths from measles showed a marked decline from those recorded in recent weeks, and included 3 in Dundee. The fatal cases of scarlet fever, which had been 2 and 4 in the preceding two weeks, were 3 last week, of which 2 occurred in Glasgow. The 3 deaths referred to "fever" showed a slight further decline from recent weekly numbers, and included 2 in Glasgow. The fatal case of small-pox was registered in Greenock. The deaths referred to diseases of the respiratory organs in these towns, which had been 54 and 56 in the preceding two weeks, were 54 last week, and were 35 below the number in the corresponding period of last year. The causes of 37, or nearly 9 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the preceding three weeks fom 22·2 to 18·5 per 1000, rose again to 19·7 during the week ending Aug. 18th. During the past seven weeks of the current quarter the death-rate in the city has averaged 19·1 per 1000, against 16·9 in London and 14·8 in Edinburgh. The 132 deaths registered in Dublin during the week under notice included 14 which were referred to the principal zymotic diseases, against 13 in each of the preceding two weeks; of these, 6 resulted from diarrhœa, 3 from small-pox, 2 from whooping-cough, 1 from scarlet fever, 1 from measles, 1 from "fever," and not one from diphtheria. These 14 deaths were equal to an annual rate of 2·1 per 1000, the zymotic death-rate during the same period being 3·2 in London and 1·5 in Edinburgh. The fatal cases of diarrhœa, which had increased from 3 to 8 in the preceding three weeks, declined again to 6 last week. The deaths referred to small-pox, which had been 1 in each of the preceding two weeks, were 3 last week, a higher number than has been recorded in the city in any week since October, 1880. The mortality from "fever" was below that recorded in any recent week. The 132 deaths in

Dublin last week included 25 of infants under one year of age, and 21 of persons aged upwards of sixty years; the deaths of infants showed a slight further increase upon recent weekly numbers, while those of elderly persons showed a marked further decline. Three inquest cases and 2 deaths from violence were registered; and 51, or more than a third, of the deaths occurred in public institutions. The causes of 8, or more than 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.

Surgeon-Colonel (local and temporary Surgeon-Major-General) Thomas Walsh to be Surgeon-Major-General, vice P. B. Smith, M.D., retired. Brigade-Surgeon-Lieutenant-Colonel William D. Wilson, M.B., to be Surgeon-Colonel, vice Surgeon-Colonel T. Walsh. Surgeon-Lieutenant-Colonel Anthony L. Brown to be Brigade-Surgeon-Lieutenant-Colonel, vice Brigade-Surgeon-Lieutenant-Colonel W. D. Wilson, M.B. Surgeon-Major Richard C. K. Laffan, from the Seconded List, to be Surgeon-Major.

INDIA AND THE INDIAN MEDICAL SERVICE.

The Queen's approval of the following promotions in the Indian Medical Service appears in the *London Gazette* of Aug. 17th:—*Bengal Medical Establishment:* To be Surgeon-Colonel: Brigade-Surgeon-Lieutenant-Colonel Arthur Stephen. To be Brigade-Surgeon-Lieutenant-Colonels: Surgeon-Lieutenant-Colonel Francis Cobham Nicholson; Surgeon-Lieutenant-Colonel Thomas Holbein Handley, C.I.E. *Bombay Medical Establishment:* To be Brigade-Surgeon-Lieutenant-Colonel: Surgeon-Lieutenant-Colonel Selim Myer Salaman, M.D. Her Majesty has also approved of the retirement from the Service of the undermentioned officer:—Brigade-Surgeon-Lieutenant-Colonel Robert Temple Wright, M.D., *Bengal Medical Establishment*. The services of Surgeon-Lieutenant-Colonel A. S. Reid, Officiating Medical Storekeeper, Calcutta, have been placed at the disposal of the Foreign Department for employment as Officiating Agency-Surgeon in Baghelkhand and Tutor to His Highness the Maharaja of Rewa, for three months. Surgeon-Captain C. C. Cassidy is appointed to act as Civil Surgeon of Purnea until further orders.

NAVAL MEDICAL SERVICE.

The following appointments are notified:—Fleet-Surgeon Edward E. Mahon, C.B., to the Royal Marine Artillery, Eastney. Surgeons: R. A. Fitch, to the *Ramillies;* H. F. Iliewicz, to the Royal Marine Artillery, Eastney; John Grant, M.B., to the *Adventurer;* Richard L. Price, M.B., to the *Herald;* J. P. Willis, M.B., to the *Repulse;* Lawrence Bidwell, to the *St. Vincent;* John Jenkins, to Royal Marines, Plymouth; and John D. Hughes, to the *Vivid*.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Thomas Edmund Stuart, 1st Essex Volunteer Artillery (Eastern Division, Royal Artillery), to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 1st Worcestershire and Warwickshire: Surgeon-Lieutenant A. F. Clay resigns his commission (dated Aug. 22nd, 1894).—*Rifle:* 4th Volunteer Battalion, the South Wales Borderers: Surgeon-Lieutenant F. E. Paton, M.B., resigns his commission (dated Aug. 22nd, 1894).

DEATHS IN THE SERVICES.

Surgeon-General Miah William Murphy (retired), whose death is announced at the age of eighty, was appointed assistant surgeon in 1842. He took part in the Burmese War of 1852-53, and acted at Donabew as staff surgeon (medal and clasp for Pegu), where he was wounded.

Surgeon-General John Henry Orr, C.B., M.D., I.M.S., Retired List, Hon. Surgeon to the Queen, died at Southbourne-on-Sea recently at the age of eighty. He entered the Madras Army in 1837, and from 1842 to 1862 was employed in the service of the Nizam of Hyderabad, taking part in the Malwa Campaign of 1857. From 1863 to 1865 he was Deputy-Inspector-General of Hospitals with the Nagpore Force, and retired in 1871 as Inspector-General of Hospitals on the Madras Medical Establishment.

SURGEON-MAJOR JOHN FREDERICK MCCREA, V.C.

Surgeon-Major McCrea, whose death we regret to have to announce, was born at Fort George, Madras, were his father was stationed, in 1854. He received his medical education at Guy's Hospital, and soon after qualifying was appointed Civil Surgeon to Her Majesty's Forces at the Cape during the time of the Zulu War in 1879. In the following year he took part in the Basauto War, and it was in this campaign that his conspicuous bravery won him the Victoria Cross. With the assistance of Captain Buxton of the Mafeteng Contingent, Surgeon-Major (then Surgeon) McCrea, after the Burghers were forced to retire, went out under a heavy fire and conveyed a wounded Burgher to the shelter of a large ant-heap, and having placed him in a position of safety returned to the ambulance for a stretcher. Whilst carrying the stretcher to the wounded man he received a bullet wound in the breast, but notwithstanding the severity of the injury the gallant officer continued to fetch in more wounded and to attend to their sufferings.

MEDICAL EXAMINATION OF MILITARY CANDIDATES.

According to the reply recently given by Mr. Woodall in the House of Commons on behalf of the Secretary of State for War, we are glad to notice that a full statement of the physical condition required of candidates for the army has been prepared by the authorities, and may be obtained by candidates on application to the War Office, by which it is believed that any qualified surgeon will be able to inform candidates whether they are likely to pass the medical examination. This appears to us to be a common-sense and practical method of proceeding, and it is in accordance with a suggestion previously made in THE LANCET to that effect. Next week in our "Students' Number" we propose to publish the text of the regulations with reference to the medical examination of candidates.

THE ARMY MEDICAL STAFF EXAMINATION.

The following is a list of successful candidates for commissions in the Medical Staff of Her Majesty's Army at the recent examination in London:—

Names.	Marks.	Names.	Marks.
Howell, H. A. L.	2445	Profeit, C. W.	2075
Lawson, D.	2270	Whitehead, J. H.	2013
Harrison, W. J.	2260	Tomlinson, N. P.	1999
Steel, E. B.	2178	Kiddle, F.	1966
Perry, S. J. C. P.	2168	Murison, J. A.	1978
Haddon, H. E.	2068	Heaton, A. S.	1940

The *Army and Navy Gazette* states, and it corroborates what we have already announced, that it is very probable that Surgeon-General Bradshaw, Principal Medical Officer with Her Majesty's Forces in India, will be granted an extension of his appointment for two years, from Dec. 5th next, the date on which he should ordinarily retire. This extension is believed to be recommended from home.

Correspondence.

"Audi alteram partem."

THE CHELSEA HOSPITAL FOR WOMEN.

To the Editors of THE LANCET.

SIRS,—When the late staff of the Chelsea Hospital for Women placed their resignation in the hands of the board of management they did so as they felt it the most honourable course to pursue after the publication of a report in which the censure was grave but was not apportioned to any particular members. In seeking re-election as individual members each understood that he would stand or fall on his own personal work at the hospital, and that if he were not included in the common blame his position would be justified before the public and the profession by the fact of his re-election. As the board of management have failed to take this view of the situation and leave it open to inference that we were not re-elected owing to our work being involved in the report, we submit as a *fact* that the committee of inquiry did not include us in the censure of the report. We feel sure the committee of inquiry will not deny this and we challenge the board of management to disprove it. We append statistics of our operative work at the hospital during 1893, and beg to remain, Sirs, yours truly,

VINCENT DICKINSON.
Aug. 22nd, 1894. J. A. SHAW-MACKENZIE.

*** The statistics were appended, but we regret that, at

any rate in this issue, we have been unable to find space for them.—ED. L.

To the Editors of THE LANCET.

SIRS,—In consequence of the comments which have recently been made in the medical press upon the silence of the late medical staff of the Chelsea Hospital for Women with regard to the report of the committee of inquiry, we feel it our duty to make a personal explanation. We have not hitherto felt at liberty to act individually, for while we were members of the late staff we felt that joint action was alone admissible. We are now free from this obligation, and as our positions are identical we submit the following joint statement:—1. At the end of 1893, when the hospital was closed, we had been on the staff for five and a half months, our duties being charge of out-patients and pathological work respectively. 2. As there was no recognised medical committee we had no voice at all in the management of the hospital. 3. We had no beds in the hospital, and such operations (mostly minor) as we performed in the temporary absence of our colleagues were unattended by mortality or septicæmia. 4. Our work was not called in question by the committee of inquiry. 5. The association of the deaths from septicæmia with the sanitary conditions of the hospital was not at the time obvious, and even now may be considered a matter of opinion. There was, therefore, nothing to lead us to call attention to the matter.

Hitherto no one, from the medical officer of health to the committee of inquiry, has ventured to apportion blame for anything that has been faulty. We have so far borne the imputation of common blame. The censure implied in the report of the committee of inquiry allowed us no alternative besides either disclaiming responsibility at once or resigning with our colleagues. We chose the latter, because it seemed to us the more loyal and honourable course. We now feel that we are at liberty to explain and that justice to ourselves demands that we should publicly state that we had no personal share of responsibility in the matter.

It seems to us that our position has been further justified by the fact that we have been re-elected to the staff of the hospital.—We are, Sirs, yours faithfully,

ARTHUR E. GILES, M.D., M.R.C.P.;
T. W. EDEN, M.D., M.R.C.P.,
Physicians to Out-patients, Chelsea Hospital for Women.

Aug. 21st, 1894.

To the Editors of THE LANCET.

SIRS,—Letters having been published by certain of my former colleagues in a contemporary, I now feel at liberty, and in a measure obliged, to publish the details of my work. Had I had the prescience of these gentlemen I might have foreseen that personal interests must sometimes be placed before considerations of common good, and have realised that others might not hold the views I have held—that conjoint work should be conjointly recorded. So far as I and the profession generally are concerned, I hope to be in a position very soon to state the whole facts of my operative work at the hospital since I joined the staff in 1891. During 1893 an exceptionally low mortality attended the work of some of the staff, an exceptionally high mortality that of others. Each man must now speak for himself. Personally, I have no wish to deal with other than my own work, and when the board of management furnish me with my full records, which I have asked for, I trust you will favour me by accepting an abstract, so that facts may demonstrate what words, written or spoken, may have misrepresented. I am, Sirs, yours faithfully,

LEITH NAPIER, M.D., M.R.C.P.

Grosvenor-street, W., Aug. 18th, 1894.

"THE ETHICS OF HOSPITALS."

To the Editors of THE LANCET.

SIRS,—Your leading article on this subject in THE LANCET of Aug. 11th is one to which little or no exception can be taken; but there are two sentences which are capable of misunderstanding, and with your permission I should like to enter a protest against any reading which may be applied to them. "The third great ethic is to omit no antiseptic precaution. ..... But over and above all this is the conscientious use, even in details, of the great antiseptic system which has revolutionised surgery." There are many who will read your use of the word "antiseptic" as being limited to the employment of chemical means for the destruction of germs, and against this possible misunderstanding I desire to protest, as your remarks are based on the performance of the great operations of abdominal surgery, and the record-breakers in this department are those who exclude all such details from their practice. If your word is to be taken to mean what is now generally known as "aseptic" precautions, then it includes much more than dangerous chemicals. It includes recommendations begun by Howard, emphasised by Semmelweis, preached by Simpson, and practised most successfully by many of the present day, including Your obedient servant,

Birmingham, Aug. 15th, 1894. LAWSON TAIT.

"CASE OF CONGENITAL SYPHILIS; INFECTION OF MOTHER BY CHILD.

To the Editors of THE LANCET.

SIRS,—Absence from London has prevented me from replying sooner to Dr. George Ogilvie's second letter on my case. His objection to the title of my paper as "misleading" is surely somewhat fanciful, as on its correctness lies the crux of the whole question at issue. Dr. Ogilvie, too, complains that I have not dealt completely with his objections to my interpretations of the case. To have done so would have been to have taken up an undue amount of your space, and his complaint may be met with one of mine—that he has not met any of the arguments with which I attempted to explain away some of the acknowledged points of weakness in the family history. It may be that some of my assertions about the manifestations of acquired syphilis in infants are rather "based on belief than on clinical observation." My personal experience of this rare accident is limited to seven or eight undoubted examples of the complaint. Had I chosen, however, to add many cases, as others have done, where inoculation in infants was alleged to have occurred through the agency of vaccination without any satisfactory proof or history of primary sore, this number would have been considerably increased. Without the inclusion of such unsatisfactory cases, is Dr. Ogilvie prepared to state that the experience of any authority, however eminent, is sufficiently extensive to justify the peremptory rejection of some of the conclusions I have drawn? Moreover, I consider the opinion of the authorities I have quoted as equally weighty as that of those mentioned by Dr. Ogilvie. I fully admit the relevancy of the quotations from Fournier and am prepared to agree with them to a high degree; in the case at issue, however, it was not a question of one or several "special symptoms" that were concerned in the determining whether it was one of acquired or inherited syphilis. The infant presented almost every sign of inherited syphilis; there was a satisfactory negative history of a primary sore and an absence of any symptom that ingenuity could pervert into one of the acquired complaint. Had it not been for the infection of the mother, the case would have been accepted as an ordinary one of congenital syphilis, in spite of the unsatisfactory family history on this score. This being so, I feel justified in regarding it as such, and see no reason for going out of the way to classify it as an example of the acquired variety. I regret I am unable to furnish Dr. Ogilvie with any satisfactory account of the two cases referred to in my former letter. The one occurred in the practice of a medical man who was too busy for note-taking, and all I learnt about it was from hearsay evidence. The other was seen some years ago by a late eminent syphilologist, who took the same view of it as Dr. Ogilvie apparently does of my case and pronounced it one of acquired syphilis, but for reasons that were unexplainable and unsatisfactory to my friend, himself an acknowledged authority on children's diseases. Since it has drawn two interesting letters from Dr. Ogilvie emphasising some of the less known points of infantile syphilis, I cannot regret the publication of my case, although, as I said, I had no certain hope of convincing the majority of the profession of my views regarding it. I am, Sirs, yours faithfully,

Upper Berkeley-street, W., Aug. 18th, 1894. J. A. COUTTS.

"THE BIRMINGHAM EYE HOSPITAL."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Aug. 18th last your Birmingham correspondent states that the above hospital will contain sixty-five beds when the new block is added. Will you kindly state that this is a mistake. The hospital at present contains

sixty-one beds and four cots, and when the new block is completed the number of beds will be ninety-five at least.

I am, Sirs, yours faithfully,

WALTER W. SINCLAIR.
Senior House Surgeon.

Birmingham and Midland Eye Hospital, Aug. 19th, 1894.

IRELAND AS A FIELD FOR TOURISTS.

To the Editors of THE LANCET.

SIRS,—Adopting the hackneyed phrase, "Justice to Ireland," allow me to ask if you will be so good as to give space in your valued journal for some notes on other routes to Ireland and through that island besides that you have named in THE LANCET of Aug. 4th, 1894. The Stranraer route that you mentioned to the north of Ireland is a speedy and convenient one for Scotland, but for Great Britain generally the Holyhead to Kingstown or to Dublin routes offer the great advantages of admirable rail connexions with all parts of England and Wales, coupled with an unsurpassed sea service. Passengers can obtain return or tourist tickets from the English, Scotch, and Welsh railway stations at moderate rates.

When parties travel together the rates are greatly reduced. Tourist tickets as well as hotel coupons can be supplied also by Messrs. Cook and Son, Grafton-street, Dublin, with full information about the various tours and places of interest in Ireland. Two or more days can be very well spent in Dublin, and having seen its various attractions—which, in the opinion of a "good judge" (Halliburton), the "Sam Slick" of a past generation, are many—the scenery of Howth, the county of Wicklow, &c. will also well repay the visitor.

The museums of Dublin contain many unique and valuable works of ancient, Celtic, and other origin. The old cathedrals and churches are very interesting. The vaults of St. Michan's Church have the remarkable property of preserving the bodies of those placed there; it occurs to me that property may be owing to the presence of carbonic acid combined with a dry soil. Certain it is, as I am informed by Professor Tichborne, that if by chance damp gets access to any of the vaults the bodies in those at once decay. The recently applied use of carbonic acid in trade has led me to think that possibly this may be the agent to which the St. Michan's vaults owe their singular properties. It is to be hoped that Professor Tichborne will direct his attention to the elucidation of this matter. To many of your readers who, at this season, are more intent on a tour in "the open" than to exploring museums, libraries of very rare old books, or cathedrals and tombs of the undecayed dead, I would address a few further remarks. There is no country within a much longer distance of England where there is so much variety of race, of scenery, of scope for sport on land, river, lake, or the ocean itself as the West of Ireland. There is a useful modern guide published by the Midland Great Western Railway of Ireland, which gives in a small space the requisite information for a tour in "Connemara and the West of Ireland." Particulars in full of the various routes to the west of Ireland and the south-west, with new lines of rail, car, and steamer communication, embracing the rivers Shannon, Lee, and Blackwater, celebrated by Spencer, Mr. and Mrs. Hall, Prout, Thackeray, and many other writers of ancient and modern times that are familiar to most persons are given in the tourist programme published by Messrs. Browne and Nolan for the Midland Great Western Railway of Ireland. Members of the medical profession who have a large experience of Continental tours agree that there many drawbacks exist, especially of a dietetic and sanitary nature, which the tourist in Ireland does not encounter.

The wonderful cliffs of Achill, represented so ably by D. Adams, as seen in this year's exhibition in Burlington House, and its unrivalled strands, so well described in the *Pall Mall Gazette* of Dec. 7th, 1878, with new routes through the wonderful scenery of West Kerry, are now easily accessible by the newly opened routes of railway from Westport to Newport in Mayo, and from Killorglin to Cahirciveen and Valentia in Kerry.

The archæologist who may have leisure to examine the seven churches in the romantic Vale of Glendalough and the ice markings of Glenmalure in Wicklow, and the ruins of Mellifont, Monasterboice, &c. in Louth and Meath, the palace, fort, prison, cathedral, and round tower of the Rock of Cashel, with numerous Druidical remains and other ruins throughout Ireland, will be amply repaid for his trouble.

I trust that, when the watery influences of the present time of year so commonly ascribed to St. Swithin shall have passed away, many may be induced to visit Ireland in the fine weather which so commonly sets in about the end of August, when, too, the Dublin Show will be held.[1] The cooler climate of Ireland, with remarkably little variation of temperature in general, has attractions which are fully appreciated by our Transatlantic cousins. This summer the (Fahrenheit) thermometer in the shade in Dublin has scarcely reached 75° or fallen below 44° on the coldest night. Your kind insertion of these disjointed notes will oblige others as well as,

Yours faithfully,
C. F. MOORE, M.D.

Aug. 20th, 1894.

"SOME COMMON SOURCES OF ERROR IN TESTING FOR SUGAR IN URINE."

To the Editors of THE LANCET.

SIRS,—If Dr. Pavy had carefully read my last letter to you he surely would not have made the statement that I "simply reassert" the absence of sugar from normal urine on the strength of my son's failure to find any reducing agent after the separation of uric acid and kreatinine by his mercuric chloride process. Every competent reader of my letter must see that if the statements of Dr. Pavy and Mr. Allen are "unrefuted," they are, at any rate, shown to be inconsistent with the results of carefully conducted experiments—experiments suggested by and confirmatory of my son's accurate observations, but performed, as I have clearly stated, by myself; such experiments, too, as will, without doubt, be repeated with like results by others. Urinary analysis has been much advanced since Dr. Pavy maintained that three-fourths of the reducing action of normal urine upon cupric oxide were due to sugar therein contained.

I am, Sirs, yours faithfully,

Savile-row, Aug. 20th, 1894. GEORGE JOHNSON.

THE PROVISIONS OF THE PUBLIC HEALTH ACT.

To the Editors of THE LANCET.

SIRS,—On June 3rd I was called to attend James Raybould at his house at Pensnett, near Dudley. He was suffering from what I suspected would turn out to be small-pox. On the 4th the disease declared itself to be such, and I duly notified it to the medical officer of health of the rural sanitary authority, the Stourbridge Board of Guardians. The patient was living in a semi-detached house with three rooms downstairs and two upstairs. There was only his wife living in the house with their child of three or four years of age. The child was taken away at once, and the wife's mother, who lived near and was in the habit of coming to the house to help with the housework, was stopped from coming. The patient's wife had already had small-pox, and a nurse was sent to the house to nurse the patient; she was revaccinated first. The doors of the house were kept locked, and no one was permitted to go in or out. On the 8th the sanitary inspector went to the house and said he had come to take Mr. Raybould to the infectious hospital, which is situated at Wordsley, next to the workhouse. They refused to let him go, and Mrs. Raybould has been prosecuted by the authority for obstructing the officer in the execution of the magistrate's order with which he was armed under Section 124 of the Public Health Act, 1875. No application had been made to remove Mr. Raybould before the order was obtained, as his wife had told the sanitary officer that they were not willing for him to be removed. Now, before this order can be granted by a magistrate a certificate must be given by a legally qualified medical practitioner to the effect that the patient is without proper lodging or accommodation. The form of certificate is published by Knight and Co. and is in general use by sanitary authorities throughout the country. The form recites that there should be a personal examination of the patient and his surroundings. In this case the certificate was given by the medical officer of health, who never saw the patient and never went to the house. On this certificate the order was granted and the attempt made to remove him. You will see by the enclosed cutting from the *Birmingham Daily Post* of Aug. 21st an account of the adjourned hearing of the summons. It was attempted to question the validity of the magistrate's order on the ground that it was obtained by an inaccurate medical certificate; but it was held by the magistrates

[1] Commencing Aug. 28th.

that this question could not be raised and rested their decision on a case, Booker *v.* Taylor, tried in 1882 and reported in the *Times*. The magistrates have granted a case for appeal on the point as to whether the validity of the order can be questioned or not. The only thing that then remained for the magistrates to decide was whether there had been any obstruction or not, and as you will see by the enclosed newspaper cutting they decided that there was, and fined the defendant half-a-crown and costs. If any two persons, a "sanitary inspector and a surgeon," were to combine together to get any man, who might for the time being be inconvenient, out of the way, it could be easily done by making a notification of a supposed infectious disease and filling up a medical certificate, and so getting a magistrate's order. The unfortunate person would be quite unable to take any proceedings, as in this case, without going to the Court of Appeal. For this reason I am taking up the case on public grounds, and not being a wealthy man I appeal to the general public for assistance to carry the case to a higher court. The notice of appeal has been given as prescribed by law. It must be done within seven days. If any individual interested in this who may wish to subscribe to the cost of appeal should send their subscription to the manager of the Brierley Hill Branch of the London and Midland Bank, Limited.

I am, Sirs, your obedient servant.

Brierley Hill, Aug. 21st, 1894. EDWARD SAINTHILL PEARSE.

HEMERALOPIA.

To the Editors of THE LANCET.

SIRS,—The mention of "the epidemic of hemeralopia in Asia Minor" which appears in THE LANCET of June 2nd, received by the last mail, gives me an opportunity to ask a question of experts in the pathology of the eye. In the paragraph it is stated that "some connexion appeared to exist between the hemeralopia and scurvy"; a little later snow-blindness is suggested as a possible complication. I want, if you will kindly permit me, to ask the experts the pathology of these conditions. Hemeralopia is one of the earliest symptoms of scurvy. It was so found by Staff-Surgeon (now Deputy-Inspector-General) Walter Reid in the *Wolverene* twenty years ago on passage round the Cape (in that cruise, too, it was the boys, sixteen to seventeen years, who were first affected), and it used to be quite common amongst the Canadian *voyageurs*, who suffered dreadfully from scurvy.[1] I have always been under the impression that this was because the hæmorrhages of scurvy began from the delicate vessels of the retina. There being, in consequence of these hæmorrhages, less working surface of retina, one can easily understand that a dim light would be less easily perceived. But snow-blindness is quite another thing, an amblyopia which, while it lasts, is continuous; and it is alleged by Staff- (now Fleet-) Surgeon R. W. Coppinger[2] to be due to a retinitis, and remarkably similar to the condition produced by too close observation of the electric arc light. But does anyone know if night-blindness or scurvy is associated with retinal hæmorrhages? and will anyone kindly tell? I have, unfortunately, seen no case of night-blindness, nor any of advanced scurvy; and in a sloop on the East Coast of Africa one has available no large library of reference. Thanking you for giving me the chance to ask, and (in advance) any surgeon who may answer me for his kindness,

I am, Sirs, yours faithfully,

H.M.S. *Swallow*, off Pemba, July 18th, 1894. W. E. HOME.

"THE NEW MEDICAL DEFENCE ASSOCIATION, LIMITED."

To the Editors of THE LANCET.

SIRS,—The almost paternal interest which Mr. Chaldecott, of the Old Kent-road, and a few of his friends take in the Medical Defence Union would be unaccountable if one did not remember that they are the promoters of a new Medical Aid Association, and that by throwing or attempting to throw discredit upon an older society they can bring the glories of the new Medical Defence Association to the fore. My colleagues are away, and I do not propose to burden your readers with matters which affect and need only interest the members of the union and which the members themselves will have a full opportunity of discussing at the adjourned special meeting about to be called after the vacation. I may, however, state that the union has not been put to a single farthing of costs in the matter of Bloxham *v.* Collie or Collie *v.* Bloxham; the only costs incurred have been in defending the action brought against the union by Mr. Bloxham. The council is not infallible, but is composed of men who give a large amount of time to their duties, and if the new societies for the defence of the profession which are springing up around us make as few mistakes as we have done they will be fortunate. We as council have been vilified as if we were fraudulent directors of a company. It is, perhaps, not realised that we have exactly the same stake in the union as its members, and that we are *not* "making a living" out of its funds and by giving valuable time to the affairs of the union are saving the members a considerable expense yearly. A little more professional and a little less of the "business" element are required in the discussion of matters like these, and it is scarcely likely that honourable men will continue to give their services if their conduct is so called to account.

I am, Sirs, yours faithfully,

A. GEORGE BATEMAN.

Longridge-road, S.W., Aug. 20th, 1894.

*** This correspondence must now cease.—ED. L.

"A CASE OF ABNORMAL AND EXTENSIVE PIGMENTATION IN AN INFANT."

To the Editors of THE LANCET.

SIRS,—The case of abnormal pigmentation in an infant recorded by Dr. Moynan in THE LANCET of July 7th is of great interest, but not, I think, unique. Two years ago I was summoned by a midwife to see a newly born child, as there was "something wrong with it." I found an infant which, from a casual inspection of the face, hands, and feet as seen uncovered, I judged to be a light-coloured mulatto. But the parents were present and they were both quite black. I had the child stripped, and then saw that it seemed to be wearing a long and high pair of bathing drawers of a black colour. They reached from above the umbilicus to about two inches above the knees. Their blackness was intense, and much deeper than I have ever seen it in any negro. The line of demarcation was quite defined. The child was perfectly healthy. I put it down as a case of abnormal distribution of pigment. The colouring matter which ought to have been supplied to the extremities was concentrated in the middle of the child's body. I arranged to have a photograph taken, but the parents removed the infant to Trinidad a few days afterwards and there it presently died.

I am, Sirs, your obedient servant,

JOHN P. TULLOCH, M.A., M.D. Ed.

Tobago, B.W.I., Aug. 8th, 1894.

"BIOLOGICAL STATION ON THE NORTH SEA."

To the Editors of THE LANCET.

SIRS,—In an annotation with the above title which appeared in THE LANCET of July 14th there is an account of the newly opened biological station at Dröbak, near Christiania. There is on the Norwegian coast another, and larger, biological station, belonging to the Natural History Museum at Bergen. The building is situated on an arm of the Bergen Fjord and is a wooden structure two storeys high. The ground-floor contains a large hall surrounded by aquaria (open to the public on payment of a small fee), a machine-room, and a large room in which hatching apparatus is placed and where dredges and similar implements are kept. The first floor is set apart for scientific work and consists of two large rooms, the smaller of which is used for physiological research requiring the use of chemical apparatus. The larger room contains a very large low sink, above which there are shelves for the small experimental aquaria. Above the shelves there are pipes from the sea-water reservoir, with numerous taps, thus supplying flowing water. These rooms are provided with ten work-tables, used by foreign as well as by Norwegian students. The monthly cost for the use of one table is 25 kronen (about 25*s.*), including the necessary reagents, the free use of all the apparatus of the station, of the library, and of the collections in the museum. Boats and men for private exploration are

[1] Fagge's Medicine, third edition, vol. ii., p. 653.
[2] Blue Book, Navy Health, 1884.

also included in the fee. The laboratories of this station are larger than those at Dröbak. The number of work-tables is greater, and there are good opportunities for scientific work. The water-supply is provided for by a pump conveying 120 litres of sea-water per minute into the reservoirs in the top storey, the pump being moved by a water-motor of two horse-power, whilst in Dröbak the water-supply is provided for by a hand-pump conveying only a somewhat small quantity of water. This station at Bergen is the largest and best station on the North Sea, and is the only one which can possibly be compared with the excellent station at Naples, though it is considerably smaller than this one.

The annotation was also incomplete in another respect, the writer ignoring the two English stations on the North Sea—viz., at Granton and at St. Andrews.

I am, Sirs, yours faithfully,

Bergen. BIOLOGIST.

HOSPITALS, "VIVISECTION," AND MENTAL CONFUSION.

To the Editors of THE LANCET.

SIRS,—Adherents of the anti-vivisection doctrine have not been fortunate in the most recent exhibition of their views. A meeting convened by them a week ago at World's-end, Chelsea, was distinguished no less by the mass of material provided for its discussion than for the violent unreason which mingled one grievance with another in a hopeless confusion of protest. Hospital administration and vivisection were condemned with equal rigour. Those of us who have followed the course of the recent inquiry into the management of the Chelsea Hospital for Women, and have marked the impartial justice which has characterised it, will nevertheless be slow to regard it as unsatisfactory solely on the ground that working men, so-called, were not numbered among its constituents. It is difficult, indeed, to see what element of strength would have been added by their presence, nor does it appear by what principle of representation they can claim a position of influence in hospital management. The opportunity should be taken at once, surely, of denying in the most emphatic manner a statement made at this meeting—namely, that the poor in hospitals are frequently experimented on for the benefit of the rich. Probably nowhere is the poor man so certain to obtain the most careful and considerate attention as in the ward of a public hospital. A like denial were too courteous an exposure of the absurdity to which another speaker committed himself on this occasion. "Experiments on hospital patients," he informed his hearers, "are the direct outcome of experiments on living animals." No more need be said. Such wild criticism as that of the World's-end orators, if it fall upon the ears of men capable of calm reason, be they poor or rich, will go far to conquer the prejudice which, in opposing the formation of a Pasteur Institute in London, would deny to the inhabitants of these islands their only remedy against a terrible disease.

I am, Sirs, yours faithfully,

M.D.

*** We may refer our correspondent to a leading article which appears under the above heading in our present issue.—ED. L.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Citizens' Golden Wedding Gifts.

MR. JOHN BRANCHER, the chairman of the Liverpool Dock Board and a citizen highly esteemed by all classes, has recently celebrated his golden wedding. As a graceful acknowledgment of this happy event he and his worthy partner of fifty years have presented, *inter alia*, the following gifts to local medical charities: Royal Infirmary, £200; Northern Hospital, £150; Royal Southern Hospital, £150; Infirmary for Children, £100; Home for Epileptics, Maghull, £50; Woolton and New Brighton Convalescent Institutions, £50 each. These gifts are not only especially welcome at the present time, when medical charities are feeling the effects of the depression of trade, &c., but, unlike legacies, are paid in full without the serious deduction of 10 per cent. for duty.

The Attack on Dr. Joseph Wiglesworth.

It is very gratifying to be able to report that on this, the fourteenth day after he was wounded in the manner described in THE LANCET of last and the preceding week, Dr. Wiglesworth continues to make satisfactory progress towards recovery. It may be well here to state that after Dr. Wiglesworth reached his room pressure was kept up by Dr. Buss and Mr. Hines until the arrival of Mr. Damer Harrisson, who, after the administration of ether, carefully examined and then enlarged the wound, subsequently placing a ligature upon the common carotid artery; he then put a plug upon the distal end of the wounded internal carotid artery. On the following day Mr. Rushton Parker was called in consultation, and the plug was then removed without any recurrence of hæmorrhage. The case is an extremely interesting one, both in a surgical and a medico-legal aspect, and it is the intention of Mr. Harrisson to publish a full report of it.

The Death-rate of Liverpool.

At the last meeting of the Health Committee reference was made to the abnormally high death-rates which had recently been reported as prevailing in Liverpool. Dr. Hope explained that it was due to the large number of deaths of infants from diseases of the digestive organs, arising presumably from improper feeding. Two very significant circumstances were also pointed out by Dr. Hope, one being the very early age of many of the infants, the other the localities in which the deaths occurred. Out of 117 infants 34 were under twelve weeks of age, 39 were from three to six months, and 44 were from six to twelve months. The localities were those parts of the town where the most poverty and privation prevailed. Dr. Hope also pointed out that a large proportion of these children were illegitimate, and he likewise alluded to the fact referred to in a previous letter—viz., that at present the boundaries of the city do not include the suburbs, as is the case with other large towns and cities. When they do so the mortality ratio of Liverpool will compare very favourably with that of any city.

Dr. Taylor and Dr. Hope.

Referring to the letters written by Dr. Stopford Taylor, the late medical officer of health, and by Dr. Hope, his successor, the chairman of the Health Committee observed that they as a committee had nothing to do with the report of the medical officer beyond receiving it and ordering it to be printed, the medical officer for the time being having the responsibility of its contents on his own shoulders. With regard to what had transpired between Dr. Hope and Dr. Taylor as to certain matters of etiquette the committee could, of course, leave those two gentlemen to decide the matter for themselves. It is to be regretted that any difference should have arisen between them, and it is a difficult and delicate subject on which to comment. Each has written, and the letters have been published. It is clear that Dr. Taylor presented his report on March 22nd and had every opportunity of securing that it should be printed. It is equally clear that the tables which form so prominent a part of the report were not ready till long afterwards, and that for these Dr. Hope, and not Dr. Taylor, was responsible. It is to be hoped now that the matter will be allowed to rest. Dr. Taylor has retired, full of years and honour, to enjoy well-earned rest. Dr. Hope has commenced his labours in an office which ought to secure for him the cordial assistance, coöperation, and good wishes of every one of his professional brethren, Dr. Taylor himself included.

Aug. 21st.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Tees Port Sanitary Authority.

THE monthly meeting was held at Middlesbrough on Monday, the mayor of Thornaby presiding. It was reported that during the month he had inspected 251 vessels from foreign ports and coastwise. Since the last meeting there had not been a single case of infectious disease notified, although vessels had arrived at the port from places in Russia which were supposed to be infected with cholera.

The Apparently High Death-rate of Morpeth.

At a meeting of the Morpeth town council, the mayo presiding, the report of the medical officer of health stated that the death-rate for the month was 24 per 1000, that there was nothing unusual in the causes of death, and that not one

case of infectious disease had been notified, but that one could not compare Morpeth with many other places; they had two very large institutions, the asylum and the workhouse, in both of which deaths were necessarily frequent. The population at the asylum, patients and officials together, was something like 700, and the inmates of the workhouse were mostly old and infirm persons, drawn from no fewer than seventy-two townships.

Death of a Newcastle Surgeon.

Mr. George Newton, of Eldon-place, Newcastle, died on the 15th inst., after an illness of about ten days. Whilst on a visit to his wife's parents at Morpeth he had a sudden attack of pleurisy, which compelled him to take to his bed. He soon developed symptoms of pneumonia and died, as above mentioned, in his forty-fourth year. He received his training as a student in medicine at the Durham College of Medicine, Newcastle-on-Tyne, and had a distinguished career. He was a Dickinson scholar and won four silver medals in addition to numerous prizes and honours certificates. He was a good surgeon and gynæcologist. He married the youngest daughter of Mr. W. Davidson, B.A., headmaster of Morpeth Grammar School, and leaves a widow and son. He was attended by Dr. Dickie of Morpeth, in consultation with Dr. Oliver of this city.

Small-pox in West Hartlepool.

At the last meeting of the Hartlepools port sanitary authority the medical officer (Dr. Biggart) reported that eleven cases had been admitted into the hospital during the past month. Of these, seven cases were small-pox. The disease was not of a virulent type, but the cases had come from nearly as many different parts of the town. It had been in the town for some time, and had either not been recognised or had been suppressed. So far there had been no deaths from it. On the recommendation of the medical officer instructions were given for the appointment of an additional nurse at the hospital.

Monkwearmouth and Southwick Hospital.

The annual meeting of the governors of this institution was held at Sunderland, under the presidency of the Rev. C. J. Hopkinson. The annual report showed that the hospital had attained its majority this year. The total number of cases treated during the past year was 3843, exclusive of 255 dental cases. The expenditure amounted to upwards of £800, and the balance on current account at the bank had been increased from £228 to £379. The report was adopted, after which the officers were elected.

Proposed Medical Charity Festival.

Preparations are being made for a great medical charity festival to be held in the Tyneside district in the course of the next few weeks. The programme includes numerous athletic meetings, special theatrical performances, &c. Dr. Oliver is the president. It is expected that the carnival will be the most imposing ever organised locally.

Newcastle-on-Tyne, Aug. 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Outbreak of Small-pox in Dublin.

FRESH cases of small-pox occur every day, chiefly in the northern part of Dublin, and last week about forty new cases were admitted into the Cork-street Fever and the Hardwicke Hospitals. A special meeting of the North Dublin Union Dispensary committee was held last week to receive reports from the medical officers with regard to various matters connected with the outbreak. Dr. Donnelly thought an assistant relieving officer should be appointed to assist in finding out the cases, but as far as vaccination was concerned the medical officers did not require any assistance. He thought a cab should be kept at the workhouse for the purpose of conveying cases of small-pox to the hospitals, and the moment an order was given the cab should be sent. With reference to the children born in the Rotunda Lying-in Hospital it was very hard to vaccinate them. On an average these births numbered 2000 yearly, and in the first place the parents of illegitimate children gave wrong addresses, and so did many who were ashamed to acknowledge that they were in receipt of charity. As to the work of vaccination itself, they could manage it without any additional medical aid, but the increased clerical work was very serious, and if it increased they should obtain assistance. Mr. Garland alluded to the necessity of isolating the families infected with the disease. The outbreak in Grenville-street arose through a child five months old; the mother came back from the hospital and communicated it to the family. A deputation was appointed to wait on the Public Health Committee with a view to the providing of cabs for cases of small-pox, and also a house for isolating suspected cases. The Dublin Sanitary Association have issued placards to be posted throughout the city showing the benefits of vaccination and revaccination, and adducing rules and regulations as to vaccination, disinfection, isolation, &c. At the weekly meeting of the South Dublin Union a deputation consisting of the Lord Mayor, Sir Charles Cameron, and the chairman of the Public Health Committee waited upon the board to urge the necessity of putting into force the provisions as to compulsory vaccination. The Lord Mayor said that the Public Health Committee did not think that the accommodation at present available in the hospitals was sufficient to meet the occasion, and they considered that some better arrangement should be made than that of putting a large number of cases in the Hardwicke and Cork-street Fever Hospitals. The Kilmainham sheds should be utilised for the purpose and got in order without delay. Sir Charles Cameron agreed that it was most undesirable to accommodate small-pox cases in general hospitals. Mr. Stafford (Local Government Board inspector) pointed out that the guardians were the proper authorities to provide hospital accommodation. He considered that the medical officers should be asked if they were willing to go from house to house in their respective districts to vaccinate, and keep their dispensaries open in the evening from 7 to 9 o'clock to vaccinate all comers. If not willing, extra men should be appointed. Mr. Stafford said that if the guardians wished to employ extra medical men and extra officers to help the existing officers in looking up defaulters, the Local Government Board would agree to the arrangement without the slightest difficulty. Small-pox was communicated so much by the air that it would be undesirable to have a small-pox hospital in or near a large town. Both the Cork-street and the Hardwicke Hospitals were undesirable for small-pox, and he would urge on the guardians to find some place in a rural district for the accommodation required. He did not wish to create a scare, but there was no question that they ought to look ahead. A deputation attended also from the Cork-street Fever Hospital, who stated that there were at present 47 small-pox patients in the hospital, 25 of whom had come in within the past three days, and that they could not accommodate more than 80 more small-pox patients. On Saturday last a special meeting of the South Union Dispensary committee was held when the medical officers of the city districts gave evidence. They all declared they did not require any additional assistance for the present. But if a house-to-house visitation was carried out, and the dispensaries were kept open from 7 to 9 P.M., they would require assistance. Mr. Stafford said that as there were 76 cases at present in Dublin he thought the time had arrived to take measures to prevent other people contracting the disease. The only known remedy was vaccination and revaccination, and he would desire that the committee should ask their officers to devote a certain period of the day to that purpose, going from house to house, and also open the dispensary between 6 and 7 o'clock in the evening for the same purpose. He was also of opinion that they ought to appoint one medical officer in addition to attend to the tickets in each district. The following resolution was adopted after some discussion:—"That our medical officers be informed that the committee are prepared to afford them any assistance that they will require in the discharge of their duties, whether medical or scrivenery work, and they be requested to inform the committee if they will be willing to make a house-to-house inspection for the revaccination of all who choose to accept it and perform the operation at the house of the party." The medical officers of each district are vaccinating from 50 to 100 persons daily. During the week ended last Saturday, the 18th inst., three deaths were registered from small-pox in Dublin. One was that of a man aged thirty-seven years, unvaccinated; the second that of a male infant eight weeks old, also unvaccinated; and the third that of a woman aged fifty-one years, who had been vaccinated "in infancy and had one small, bad mark." Thirty-seven cases were admitted to hospital during the week, being 11 over the number of admissions for the previous week, and 78 remained under treatment. The medical officers of the four dispensary districts in the South Dublin Union have consented to carry out

house-to-house inspection and are offering to vaccinate or revaccinate the parties at their own homes. Three of the four districts have had an assistant medical officer appointed. The South Dispensary Committee have resolved that the dispensaries shall be opened from 7.30 P.M. to 8.30 P.M. every weekday.

Accident to Mr. Denham, L.R.C.P. Irel., of Dublin.

On Saturday last Mr. Denham, while driving, was thrown to the ground with great force in consequence of the axle of the gig breaking. He was unconscious for some time, suffering from concussion of the brain, but it is expected that in a few days he will be all right. He is under the care of Mr. Henry Gray Croly.

Lunacy in County Limerick.

As in other parts of Ireland, lunacy has shown a considerable increase for the past two years, and this has been so apparent that the Inspectors of Lunatic Asylums have agreed that additional asylum accommodation should be provided without delay. They have suggested that additional accommodation should be provided in the Limerick Lunatic Asylum to the extent of eighty extra patients each at the male and the female side of the asylum. They have also suggested that fifty additional acres of land should be purchased for the use of the asylum inmates; and that the pauper lunatics in the workhouse should be transferred to asylums. The resident medical superintendent states that owing to the increase of lunacy the day-rooms had to be converted into sleeping-rooms, and although there was practically only accommodation in the asylum for 420 patients, the actual number was 568. The governors have decided to acquire thirty additional acres, and to provide accommodation for 160 additional inmates.

Aug. 21st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The External Application of Alkaloids in Diseases accompanied by Cutaneous Manifestations.

A FEW weeks ago I reported an interesting communication made by MM. Guimard and Geley on the antithermic action of certain alkaloids (cocaine, sparteine, solanine, and helleborine) applied to the skin. The same observers now state[1] that the application of this method to cases in which the disease concentrates its activity on some internal organ does not permanently modify the pathological process, although a temporary antipyretic action is produced. In those diseases, however, in which the dermis is involved most interesting and instructive results were obtained. The alkaloid chosen for the experiments was sparteine, on account of the durability of its effects. In the latter class of diseases, instead of a fall of temperature of 1° or 1·5° C., there was noted one of 3°, 4°, and even 5° C. The general tracing was, moreover, quite modified, the temperature being frequently brought permanently down to the normal. At other times the permanent descent was preceded by oscillations, which, however, were shortened perceptibly. The diseases in which these happy results were noted were measles, scarlet fever, erythema nodosum, febrile eczema, erysipelas, and small-pox. In scarlet fever a powerful antipyretic action is obtained, but already existing complications are not influenced. MM. Guimard and Geley believe, however, that the early application of sparteine would prevent their appearance. A like curative action was observed in measles uncomplicated with pulmonary trouble; but the most decided effect was noted in cases of erysipelas. In a considerable number of such cases, three, four, or even fewer cutaneous applications of sparteine resulted in a permanent fall of temperature and recovery. In every instance the redness ceased to spread and, becoming paler, soon disappeared. In variola—a disease the gravity of which is proportional to the extent of the rash—a beneficial effect might reasonably be expected. In a case of confluent small-pox the local application of sparteine, made just when the contents of the vesicles were becoming opaque, rendered the suppurative process abortive, the vesicles shrinking almost at once, and then drying up. The foregoing facts will amply justify a trial of the method on your side of the Channel.

[1] Académie des Sciences, Aug. 6th.

Hysterical Attacks treated by Traction of the Tongue.

M. Balade of Bordeaux[2] has recently treated two cases of violent attacks of hysteria by means of traction of the tongue continued for a few minutes. In each instance the effect was satisfactory in bringing the attack to a speedy close after the usual remedies had failed. This method must not be confounded with the rhythmic traction of the tongue advocated by Dr. Laborde in cases of asphyxia—M. Balade simply holds the tongue beyond the dental arch for several consecutive minutes.

The Cause of Ingrowing Toe-nail.

Most authorities state that this condition is due to the pressure of tightly fitting boots. Dionis, however, has observed this disease in unshod monks, and Binaud in bedridden tuberculous patients. Poucet of Lyons has shown that persons of lymphatic temperament, in whom the big toe is thick and the corresponding nail flat and small, are particularly subject to ingrowing of the nail. But the disease is frequently seen in the robust, in whom the great toe has been deviated from its normal direction by narrow-pointed boots. In these cases, however, M. Regnault[3] ascribes the morbid condition of the nail to injury, such as a blow, combined with want of personal attention, which allows the culture in the groove of ordinary pyogenic microbes. Interrogation of the sufferer will often bring to light the occurrence of a contusion of the nail, followed in a few days by suppuration at the external groove. Taken in time, these cases are easily treated by means of carbolic foot baths and antiseptic dressings.

Treatment of Hypertrophy of the Prostate Gland by Castration.

Drs. J. William White of Philadelphia and Frémont-Smith[4] have each successfully remedied intractable bladder trouble due to enlargement of the prostate by castration. The success of such an operation would argue as close a connexion between the testis and prostate as between the ovary and the uterus. Our own incomparable John Hunter remarked on the difficulty of finding a prostate in winter which became voluminous in spring. He also stated that the prostate of a good bull is large and supple, whilst in the castrated animal it is small and sclerosed. Griffith says that in cats and dogs that had been subjected to castration some years previously, the prostate consists only of a mass of fibrous tissue enclosing débris of glands and a few atrophied muscular fibres. Pélican states that the prostate of eunuchs is no larger than that of a child. M. Launois of Paris[5] has recently studied from an embryological, anatomical, and physiological point of view the relation existing between the two organs. In monorchids and in subjects of unilateral ectopia the corresponding lobe of the prostate is alone atrophied, whereas the atrophy is total in cases of cryptorchidism or of complete absence of the testes. The atrophy of the testes, sometimes the result of orchitis, is synchronous with a corresponding atrophy of the prostate. M. Launois further states that double castration in man and animals entails considerable atrophy of the seminal vesicles and prostate. Moreover, should the prostate be enlarged, the operation determines the shrinking of that organ. This form of surgical intervention is thus amply justified where, in an old man, whose powers of procreation are a thing of the past, the ordinary palliative treatment has failed and when his strength would not withstand the shock and dangers of other and more serious procedures proposed for the relief of this condition.

Aug. 21st.

RUSSIA.

(FROM OUR OWN CORRESPONDENT.)

Mortality Statistics among Russian Medical Men.

WRITING in the *Vrach*, Dr. N. L. Zeland gives some details of 225 deaths of medical men out of 642 such deaths that have been recorded in that journal during the past three years. The cause of death was not stated in the remaining 417. Of the 225 deaths no less than 51, or nearly one-fourth of the total, were due to typhus fever. Pathisis was the cause of 34 deaths, and "suicide" is third on the

[2] Gazette des Hôpitaux de Toulouse, July 28th.

[3] Association Française pour l'Avancement des Sciences, Congress at Caen, Aug. 13th.

[4] Annals of Surgery, July, 1894, p. 52.

[5] Association Française pour l'Avancement des Sciences, Aug. 11th.

list, with 20 deaths. Cholera was the cause of 9 deaths, and diphtheria of 4. Taking the deaths from infectious diseases, which were presumably contracted from patients (not including 7 deaths from typhoid fever), and adding to them one death from violence in the cholera riots the death of the surgeon of the ill-fated man-of-war *Rusalka*, and a death from drowning in an endeavour to save another, it is found that 75 medical men, or exactly one-third of the total, lost their lives, as the writer expresses it, on the field of battle. Suicide, he thinks, is on the increase among members of the medical profession. In the three years 1886–88 suicides in the profession averaged 300 per million living annually, the corresponding figure in the whole population being only 30 per million. In the last three years the figure has risen to 380 per million.

Pasteurism and Hydrophobia in Russia.

The following Russian towns possess "Pasteur stations": St. Petersburg, Moscow, Warsaw, Odessa, Kharkof, Samara, and Tiflis. Some details of the cases treated in these institutions in the year 1891 appear in the recently issued annual report of the Medical Department of the Ministry of the Interior. In all, 2976 persons who had been bitten by animals applied for treatment; 2815 of these went through a course of injections, and 35 died from hydrophobia. Of 2512 persons bitten by dogs, 17 died; of 119 bitten by wolves, 18 died. In St. Petersburg, of 153 persons inoculated 2 died. One, a girl aged seventeen, with many wounds on the face and elsewhere, caused by the bites of a wolf, died on the sixteenth day after the treatment was commenced, and twenty-one days after the bites were received. The second, a man aged forty-five, was bitten by a mad dog; treatment began on the twentieth day and lasted seventeen days, death occurring twelve days later. In neither of these cases were the wounds cauterised. In Moscow, of 768 persons inoculated 3 died. One, a girl aged thirteen, was bitten on the face by a dog; treatment began on the eleventh day, and hydrophobia developed three days later. The second, a man aged forty-eight, was bitten deeply on the face and hands by a wolf; treatment began on the third day, and hydrophobia developed four days later. The third, a man aged thirty-eight, was bitten on the hands by a dog; the date on which treatment began is not stated, but death occurred two weeks and a half after the treatment was completed. In Warsaw, of 372 treated 2 died—viz., a boy aged two, who had been bitten on the face by a dog, and a man aged thirty-eight, who had also been bitten by a dog. In Odessa, of 854 inoculated 11 died—9 during the course of injection and 2 later. Of the first group, 3, who had been bitten by wolves, died respectively on the seventeenth, twenty-second, and twenth-sixth days after receiving the wounds, and 6, who had been bitten by dogs, died on the fifteenth, eighteenth, nineteenth, twenty-sixth, thirty-first, and thirty-fourth days respectively. Of the second group, 1 died on the fifty-eighth day and the other on the sixtieth day after being bitten. In Kharkof, of 280 persons bitten by dogs, 2 died. One, a woman aged thirty-three, was bitten on the wrist; treatment began on the tenth day and lasted a week; hydrophobia developed twenty-three days after the treatment was completed. The second, a man aged thirty-six, was bitten on the face; treatment began on the seventeenth day and lasted a week; hydrophobia developed thirty days later. Of 21 persons bitten by wolves 3 died. One, a man aged twenty-one, was bitten on the hand; treatment began on the thirtieth day, and hydrophobia appeared on the eighth day after the treatment was completed. The second, a man aged twenty-nine, was bitten on the face and hands; treatment began on the third day, and hydrophobia developed twelve days later, before the course of treatment was completed. The third, a man aged twenty-one, was bitten on the face, neck, and finger; treatment began on the third day and lasted fourteen days; hydrophobia appeared three weeks later. In Samara, of 222 treated, 8 died. Of these, 3, who had been bitten by wolves, and 1, who had been bitten by a dog, died during the course of injections; 2, bitten by a wolf, and 1, bitten by a dog, died within fifteen days of the completion of the treatment; and 1, bitten by a dog, died after a longer interval. In Tiflis, of 144 treated, 4 died—viz., 3 during the course of treatment and 1 two days after receiving the last injection. The percentage death-rate of those treated at the seven different stations varied from 0·55 to 3·6.

The Cholera Epidemic.

Cholera is rapidly diminishing in St. Petersburg. During the past week the daily number of fresh cases has varied between 13 and 29, and of deaths between 7 and 17. At the moment of writing, 120 cases of cholera remain under treatment. In Cronstadt 3 cases only remain in hospital. Elsewhere in Russia cholera is prevalent in all the ten Polish governments, with the exception of Kalisz and Suvalki; in the Baltic provinces; and in the adjacent governments of Grodno, Kovno, Minsk, Novgorod, and Mogilef. A few cases have also occurred in the governments of Yaroslavl, Tver, Kostroma, Tula, and Pskof.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Annual Meeting of the New Zealand Medical Association.

THE annual meeting of the above association was held on March 19th, at Napier. Dr. Spencer of Napier was the elected president and occupied the chair. The attendance was, with the exception of a few members of the Wellington branch of the association, almost confined to the local practitioners, although delegates representing Auckland, Christchurch, Nelson, Otago, Napier, and Wellington sat on the council. Members of the Otago branch were conspicuous by their absence, owing, no doubt, to the venue being almost at the last moment changed from Christchurch to Napier; but Dr. Chapple of Wellington—a medical graduate of New Zealand University—worked hard on behalf of his school when the debate on medical education and examinations in this colony cropped up. The president gave a most interesting address on the Influence of Sunlight on Microbes, which is to be published and circulated among the members of the association. The leading topic of the conference was, of course, the discussion as to whether the colony was "ripe" or not for granting medical degrees. Numerous resolutions and amendments were proposed, and finally one introduced by Dr. Cahill of Wellington was carried, but only by the casting vote of the chairman—viz., "that no one centre in New Zealand can provide sufficient clinical material for effective clinical teaching." The medical men of Napier and surrounding districts are to be complimented on the successful way in which they entertained their visitors, and the annual dinner held on March 21st was a most enjoyable *réunion*.

Sanitary Legislation in Wellington.

Mr. Brandon, Mayor of Wellington, read an extract from a southern paper at a meeting of the city council, on June 22nd, which, referring to the death of the late commissioner of taxes—the late Mr. C. M. Crombie, who succumbed to an attack of typhoid fever—spoke of the indolence and neglect of the city council in regard to sanitary matters. Believing that great improvements had recently been accomplished in the way of sanitation in the city, he had instructed the authorities to give him the returns of typhoid fever in order that the council might not be led astray by the article in question. They had two records to go by—first, the number of cases reported to the council by the local medical practitioners; and, secondly, the number of cases on the hospital books. The latter being authentic, I quote the returns:—

Date.	Hospital book.	Deaths.
1891	118	11
1892	193	16
1893	96	7
1894 (up to June 14th)	71	3

This record is encouraging, and I am pleased to be able to congratulate the council on a distinct improvement on the records of past years. There is no doubt whatever that there are a few hundred cranky objectors to reasonable and helpful legislation still to the fore in the city of Wellington. There are non-progressive cranks in every community, and the proportion is perhaps not any larger in Wellington than anywhere else. It has been well recognised—as I endeavoured some two or three years back to demonstrate—that the empire city needed sanitary reformation, and therefore the attitude of these cranks is less defensible in connexion with this city than elsewhere. The mayors of Wellington during the past four years have set themselves diligently and determinedly to work to prepare, with the aid of the best professional advice obtainable, a complete drainage scheme on a large scale. The people gave their consent when it

was shown how necessary the scheme proposed was in the interests of their health, and the necessary loan for the purpose was authorised by them and duly consented to by Parliament. So far good. The works are under way, but, being very extensive, will take some considerable time to complete. In the meantime the civil authorities find themselves hampered at every turn by objections to this thing and that. At a public meeting held last week at Wellington resolutions were passed by the malcontents objecting to certain provisions of the Drainage Bill. In the first place, the meeting objected to the corporation being permitted to borrow without taking a vote of the ratepayers on the subject; and, secondly, it objected to the council borrowing at all for the purposes named. These are as follows: it is intended that wherever there is a main drain every house within reasonable distance shall be connected. There will be no option, but as immediate payment might involve a real hardship on needy owners, the city council put a provision in their Drainage Bill, which is now before the House of Representatives, authorising them to do the work and to extend the payments over six years; and a further provision is added that to enable them to do the work and to lie out of money, they may borrow up to the value of the work done until the amount is repaid. Now any objection to such a proposal as this is ridiculous, because corporations may borrow from their bankers an amount equal to the amount owing to them by the burgesses for rates for the purpose of making roads &c. Wellington merely asks for this in respect to its drainage connexions. The city council cannot do it out of the original drainage loan because that is all required for the public drainage works. I sincerely trust that the mischievous action of these sanitary objectors will not be crowned with success, and that the clauses will not be struck out of the Bill.

New Zealand, July 10th.

Obituary.

A. E. TURNOUR, M.D. EDIN., M.R.C.S. ENG., J.P.

DENBIGH.

THE death of Dr. A. E. Turnour, a well-known and universally respected practitioner in Denbigh, which occurred on Tuesday, Aug. 7th, was the cause of a very general expression of sincere regret among the inhabitants of his native town. Dr. Turnour's death occurred under particularly sad and dramatic circumstances. He had been for some time past suffering from angina pectoris, and had been enjoined to avoid all excitement and arduous work. He had obeyed these injunctions as far it was possible for an active and enthusiastic man to do; but on the morning of Aug. 7th he went to the infirmary, intending to perform an operation for the removal of diseased bone in the foot of a patient in whom he took a particular interest. Every preparation had been made, and the patient had been placed under the anæsthetic, and Dr. Turnour had taken up the instruments, when he uttered a slight sigh, and fell forward unconscious. His colleagues, knowing his state of health, immediately realised what had happened, and it was seen at once that the end had come. Dr. Turnour had been in practice in Denbigh for over fifty years, having originally settled there in the spring of 1844, and during his busy half century of life in the little Welsh capital he had been closely identified with the municipal life of the town, adding public to professional duties. He had served on the town council and had been mayor of the borough, and there was scarcely an institution in the neighbourhood with which he had not been connected, not as a figurehead, but as an active coöperator. He was a munificent benefactor both of St. Mary's and St. David's Churches; he was the chief promoter, in his character of consulting physician to the Denbigh Infirmary, of a local nursing institute; he was consulting physician to more than one medical charity in the town of Rhyl; he was chairman of the governors of Denbigh Grammar School, a member of the School Board, and one of the founders of the Working Men's Free Library; and the oldest magistrate of the borough, as well as being on the commission for the county. When we add that in his numerous public capacities, as in his private relations with his patients, he ever displayed, together with unswerving rectitude, great capability, sympathy, and charity, we can understand that in Dr. Turnour the town of Denbigh has lost a valuable citizen and one whom it will be impossible to replace.

DEATHS OF FOREIGN MEDICAL MEN.—The deaths of the following members of the medical profession abroad are announced:—Dr. Oskar Teodor Sandahl, Principal of the Stockholm Pharmaceutical Institute and Professor of Pharmacology in the Caroline Medico-Chirurgical Institute of that capital, at the age of sixty-four. For many years he had resided on account of his health in the south of Europe and in Egypt, where he had large opportunities of collecting botanical and pharmaceutical specimens. His first Professorship was of Natural History.—Dr. M. A. Khomyarkoff, Professor of Clinical Therapeutics in the University of Kazan.

Medical News.

UNIVERSITY OF LONDON.—The following candidates passed in the Preliminary Scientific (M.B.) Examination held in July, 1894:—

ENTIRE EXAMINATION.—FIRST DIVISION.

*Atkins, John, Guy's Hospital.
Aubrey, Thomas, Berkhampstead School.
Barwell, Harold Shuttleworth, St. George's Hospital.
Bone, Elizabeth Honor, Durham College of Science, Newcastle-on-Tyne.
*Brawn, Harry Ellis, Mason College and King Edward's High School, Birmingham.
Brook, Francis William, Guy's Hospital.
Buckley, Charles William, St. Mary's Hospital.
Collyns, John Moore, St. Bartholomew's Hospital.
*Cox, Leonard Waters, Mason College and Municipal Technical School, Birmingham.
Dunstan, Walter Robert, London Hospital.
Dunston, John Thomas, Guy's Hospital.
Edmonds, Agnes S., B.A., Ladies' College, Cheltenham.
Floyd, Ernest William, Owens College.
*French, Herbert Stanley, Dulwich College.
Gandy, Thomas Hall, University College.
Gardiner, Alan Poole, Clifton Laboratory.
Gardiner, Alexander Stoker, St. Mary's Hospital.
*Gough, William, Yorkshire College.
Gröne, Friedrich, Leighton Park School, Reading.
Hawker, Herbert, University College.
Hayward, Frank Herbert, University College, Bristol.
Hora, Frederick R. Hay, B.A., Birkbeck Institution and private study.
Howgate, James Henry, Yorkshire College and private study.
Howitt, Joseph Henry, St. John's College, Cambridge.
Iles, Mary Muriel G., University College, Aberystwith.
Inman, William Sam, Higher Board School, Sheffield, and Firth College.
Jenkins, James Travis, University College, Cardiff.
Kinloch, Robert Blair, University College, Cardiff.
*Le Bas, Gervaise, private study.
*Lilley, Ernest Lewis, Wyggeston School.
*Mott, Charles Francis, King's College.
Osborn, Alfred Gelsthorpe, Carlyon College.
*Perry, Florence Elizabeth, Clifton Laboratory and University College, Bristol.
Phillips, Miles Harris, University College, Bristol.
*Raw, Frank, Kingswood School.
*Reeve, Herbert Midgley, Aske's School, Hatcham.
Richards, John Evans, University College, Aberystwith.
Secretan, Walter Bernard, Guy's Hospital.
Sheldon, Hugh Frederick, Owens College.
Truman, Bernard Renshaw B., High School and University College, Nottingham.
Turnbull, Jane Holland, University Tutorial College.
Walker, Lewis Augustus, St. Bartholomew's Hospital.
White, Percy Walter, University College, Bristol, and Clifton Laboratory.

SECOND DIVISION.

Amos, Cornelia B. Sheldon, University College.
Atkinson, Frederick Cecil Edgar, St. George's Hospital.
Beer, Rudolf, Middlesex College of Chemistry, Carlylean and Tutorial Colleges.
Bevan, Arthur, University College.
*Billington, William, Mason College.
Braithwaite, Percy Frank, Owens College.
Brown, Alexander, King's College.
Burrows, Harold, St. Bartholomew's Hospital.
Cousins, Mabel Eliza, University of Oxford.
Danks, Walter Seymour, St. Bartholomew's Hospital.
Davey, John Bernard, Middlesex Hospital, University College, and Birkbeck Institute.
*De Mouilpied, Alfred T., Kingswood School.
Densham, Alec, University College.
Dick, Walter, University College.
Dunk, Harry, Yorkshire College.
Fraser, Alexander, Guy's Hospital.
Gisburn, Alfred Ernest, Yorkshire College.
Gowdey, Annie Chapman, University College.
Green, Arthur Stanley, Royal College of Surgeons and Royal College of Science, Dublin, and private study.
Hadley, Ernest Cutcliffe, King Edward's High School, Birmingham and Mason College.
Heath, Philip Maynard, University College.

*Jones, Arthur Webb, University College.
Low, George Harvey, St. Bartholomew's Hospital.
McDougall, John Tyley M., Guy's Hospital.
*McMullen, William Halliburton, King's College.
Meachen, George Norman, Guy's Hospital.
Meredith, Richard William Herbert, Epsom and University Colleges and Middlesex Hospital.
Morgan, Edwin, University College, Cardiff.
Munro, Donald John, Guy's Hospital.
Paine, Mabel, private study and University Tutorial College.
Perrin, Thomas, St. Thomas's Hospital.
Price, David Thomas, University College, Bristol, and private tuition.
Reid, Archibald Douglas, University Tutorial College and private study.
*Reynolds, Howard Welles, Birkbeck Institute, private tuition, and Tollington Park College.
Roche, Alfred Reginald, St. Bartholomew's Hospital.
*Rogers, Walter George, University College, Cardiff.
Sayer, Ettie, University College and private tuition.
Scott, Claude Sigismund, St. Bartholomew's Hospital.
*Sprawson, Cuthbert Allan, King's College.
Stewart, Walter Grahame, Guy's Hospital.
Stock, Philip Graham, University College, Bristol, and Clifton Laboratory.
*Swinnerton, Henry Hurd, Kingswood School and private study.
Tattersall, William Hartley, Owens College and private tuition.
Tregear, Walter Vincent, B.A., University Tutorial College.
Turner, Frank Douglas, Guy's Hospital.
Vine, Alfred Bertram, Kingswood School.
Walker, John Frederick, London Hospital.
Wilkes, Alfred Ernest Freer, private study and tuition.

HONOURS CANDIDATES RECOMMENDED FOR A PASS.

*Clapham, Lucy Beatrice, Bedford College, London.
Dadd, John William, Downing College, Cambridge.
Frost, Cecil Scarlett, St. Bartholomew's Hospital.
*Heaton, Noel, University and University Tutorial Colleges.
Macdiarmid, Allan, University College and private study.
Sharp, Margaret Sophia, University Tutorial College.

CHEMISTRY AND EXPERIMENTAL PHYSICS.

†Andrew, Edwyn Gaved, Guy's Hospital.
Betts, Alfred John Vernon, University Tutorial College and Middlesex College of Chemistry.
†Binns, George, Owens College and private study.
Black, Guy, University Tutorial College.
Brailey, William Herbert, Queen's College, Cambridge.
Bredin, James Crawford, Mason College.
Chetwood, Thomas, Epsom College.
†Clements, Edward Cecil, Middlesex Hospital and private study.
†Cooke, Francis Gerrard H., Birkbeck Institute and Pharmaceutical Society.
†Crombie, Charles Harley, Worcester College, Oxford.
†Ellis, Ernest Fitzgerald, University Tutorial College and private study.
†Etlinger, Frederick Kincaid, University College and private tuition and study.
†Ferris, William, St. Mary's Hospital and University Tutorial College.
Flook, Hubert Sydney, private tuition.
Foster, Arthur Herbert, Epsom College.
Harrison, Sydney George, Charing-cross Hospital.
Hodgson, Stanley, University College and City of London School.
Jones, Lawrence, St. Paul's School.
†Joy, Norman Humbert, St. Bartholomew's Hospital.
Judson, James Douglas, Owens College.
Miller, Ernest Alfred, Aske's School, Hatcham.
†Moon, Arthur, Guy's Hospital.
Moxon, Henry Vidal, University College and private tuition.
Murrell, Christine Mary, University College and private tuition.
Nitch, Cyril Alfred Rankin, University Tutorial College and private tuition.
Noall, William Paynter, Owens College.
Nutt, Harold Rothery, Bedford Modern School.
Ormond, Sidney James, Guy's Hospital.
Paramore, Richard Horace, Merchant Taylors' School.
†Pearse, Edward Mountjoy, Clifton Laboratory.
Pick, Lawrence, University Tutorial College.
Ransford, Alan Carpmael, Dulwich College.
†Roberts, Adeline Mary, private study and University Tutorial College.
Robinson, Henry, St. Paul's School.
†Russell-Risien, Ernest, University College and private study.
†Ruttledge, William Edward, University and University Tutorial Colleges.
†Schreiner, Wilfred Percy, Downing College, Cambridge.
Scrase, James John Sheat, St. Bartholomew's Hospital.
Selous, Cuthbert Fennessy, University Tutorial College and private study
Spearman, Robert, Guy's Hospital and private tuition.
Stedman, Percy Taylor H., private study and tuition.
†Stewart, Mary Ariel, private study.
Stilwell, Archibald James, University Tutorial College.
†Stuart, Hackworth, University and University Tutorial Colleges.
†Style, Margaret Helen, Royal Holloway College.
†Swan, Russell Henry J., Camberwell Grammar School.
Swift, Eric Wilson Danby, Firth College.
Turnbull, Robert Cyril, Yorkshire College.
Van Praagh, Harold John, St. Mary's Hospital.
Watkin, Paul Ieuan, King Edward High School, Birmingham, and Mason College.
Watson, William Bertram, Durham College of Science, Newcastle-on-Tyne.
Woodforde, Robert Edmund H., St. Bartholomew's Hospital.

BIOLOGY.

Aldred, John White, Owens College.
Arber, Edward Alexander Newell, Mason College and private study.
Beatty, Thomas Ramsay, B.A., private study and University Tutorial College.
Beaumont, Noel Charles, St. Bartholomew's Hospital.
Bennett, Maud, University Tutorial College.
Bensley, Vernon Cyril, St. Mary's Hospital and University Tutorial College.
Bernard, Christian Constance, University College.
Brown, Charles Richard, St. Bartholomew's Hospital.
†Bryson, Isobel Sarah, University College.
†Bull, Stanley Arthur, University Tutorial College and Westminster Hospital.
Buxton, George, University College.
Capper, Harold Selwyn, University College.
Chapman, John Ellis, Firth College.
†Child, Cecil Edwin C., Epsom and University Colleges.
Coleridge, Alfred, University College, Bristol.
Cunningham, Herbert H. B., St. Mary's Hospital.
Dawson, William Collings, Mason College and King Edward High School, Birmingham.
Dobson, Margaret Bernard, University College.
Dyer, Walter Percy, St. Bartholomew's Hospital.
†Elwes, Frederick Fenn, Middlesex Hospital and University College.
Etheridge, Charles Edward, University College.
†Evans, Charles Edward, University College.
Evans, William Thomas, University College, Aberystwith.
ffrench, John Gay, University and University Tutorial Colleges.
Flint, William Henry, Mason College.
Foster, Henry Bertram, Guy's Hospital.
†Gayner, John Stansfield, St. Bartholomew's Hospital.
Gowlland, Edward Lake, University College.
Graves, David Sydney, Guy's Hospital.
Green, Sydney Balch, St. Bartholomew's Hospital.
Hammond, John A. Balding, Cariyon College.
†Harris, Herbert Stocker, University Tutorial College and private study.
Harrison, John Wilkins, St. Paul's School and University Tutorial College.
†Harrison, William Walter, Guy's Hospital.
Hayes, Arthur Herbert, St. Bartholomew's Hospital.
Hickinbotham, Edward B., King Edward's High School, Birmingham, and Mason College.
Hildesheim, Oscar, St. Paul's School.
Hilton, Charles Guy Salter, University and University Tutorial Colleges.
†Hope, Percy Lake, St. Thomas's Hospital.
†Hyland, James, St. Bartholomew's Hospital.
Ingram, Percy C. Parker, University College, Cardiff.
Jones, David T. Cadvan, University College, Aberystwith.
Judson, Joseph Edward, Owens College.
Lewis, William Edward Vaughan, Mason College.
Male, Maurice Taylor, University Tutorial College.
†Miller, Walter George Douglas, University College.
†Morgan, Thomas, Guy's Hospital.
Morris, Frank Mayo, London Hospital.
Moses, David Assur Henry, St. Paul's School and University Tutorial College.
Moss, Bertram Wilmore, University College, Nottingham.
Neumann, Edgar David M., University College.
†New, John Sherwood, University College and private study.
†O'Dowd, John Austin, Mason College and private study.
Panckridge, William Panckridge, University College.
†Pike, Cyprian, London Hospital and private study.
†Prowse, William Barrington, University College, Bristol.
†Robinson, Florence, University Tutorial College.
Robson, Isabel, University College, Aberystwith.
Rowe, John Joseph Stephen, University Colleges, Aberystwith and Liverpool.
†Sedgwick, Charles Humphrey, St. Paul's School.
Stark, Arthur Campbell, private study and University Tutorial College.
Stevens, Andrew Norris, University College.
†Thompson, Frederick George, St. Mary's Hospital.
†Truman, Dudley Beckit, King's College.
†Turner, Walter Edward, private study.
Van Cuijlenburg, W. Florence, private study.
Vaughan, Arthur Llewellyn, St. Bartholomew's Hospital.
Williams, Sydney Rice, Merchant Venturers' Technical College, Bristol.
Wirgman, Charles Wynn, University College.
Wynne-Edwards, Edith A., University Tutorial College and private tuition.
†Young, Edward, London Hospital, University Tutorial College and private study.
Hilton, Charles Guy Salter, University College and University Tutorial College.

BOTANY ONLY. (Under former Regulations.)

†Wilkinson, Percy John, private study.

* These candidates have also passed in the Mathematics of the Intermediate Examination in Science, and have thus become admissible to the B.Sc. Examination.
† These candidates have now completed the examination.
N.B.—The names of candidates who have obtained Honours do not appear in this List.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates have passed in the under-mentioned subjects:—

Surgery.—G. Allcock, St. Thomas's Hospital; W. E. Bremner, King's College; P. M. Smith, St. Mary's Hospital; F. A. Storr, Leeds; A. H. Trevor, Guy's Hospital; and S. S. Wallis, Guy's Hospital.
Medicine, Forensic Medicine, and Midwifery.—R. W. S. Christmas, Charing-cross Hospital; J. W. A. Cooper, King's College; J. Mace, Leeds; W. Mansergh, Manchester; R. Marshall, Manchester; T. E. Rice, King's College; P. M. Smith, St. Mary's Hospital; and H. L. Thurnell, St. Thomas's Hospital.
Medicine and Forensic Medicine.—A. M. Thornett, Royal Free Hospital.
Medicine and Midwifery.—E. D. Macnamara, Westminster Hospital.
Forensic Medicine and Midwifery.—W. S. Routledge, University College

Forensic Medicine.—F. E. A. Webb, St. Bartholomew's Hospital.
Midwifery.—R. G. Jones, London Hospital; R. Keatinge, London Hospital; G. Lowsley, St. Bartholomew's Hospital; and F. C. Sutherland, St. Bartholomew's Hospital.

To Messrs. Alcock, Cooper, Mansergh, Marshall, Rice, Smith, Storr, Sutherland, Thurnell, and Webb was granted the diploma of the Society.

At the recent examination for the prizes in Materia Medica and Pharmaceutical Chemistry the successful candidates were: First (the gold medal), Harold James Crompton of Owens College, Manchester; second (the silver medal and a book), Ralph Paul Williams, of King's College, London.

BEQUESTS AND DONATIONS TO HOSPITALS.—The late Mr. Benjamin Waters, of Newcastle-on-Tyne, has bequeathed £10,000 to the Royal Infirmary in that city.—The Mercers' Livery Company has made the following grants—namely, 50 guineas to the University College Hospital and 20 guineas to the Central London Ophthalmic Hospital, Gray's-inn-road.—The Grocers' Livery Company has made the following grants—namely, £100 each to the Building Fund of the British Home for Incurables, Streatham, to the Royal National Hospital for Consumption at Ventnor, and to the Great Northern Central Hospital, Holloway-road; and £75 to the West London Hospital, Hammersmith-road.—The Goldsmiths' Livery Company has contributed £50 to the East London Hospital for Children, Shadwell.—The Fishmongers' Livery Company has voted 100 guineas to the University College Hospital.—The Countess of Radnor has sent a cheque for £200 to the Alexandra Hospital at Woodhall Spa, being a part of the proceeds of a concert recently arranged in London.—The late Mr. Saunders, of Fordington, Dorset, has bequeathed £100 to the Dorset County Hospital.—Mr. Thomas Meadows, late of London and Hereford, has bequeathed £500 each to the Hereford General Infirmary and the Hereford Eye and Ear Hospital, £250 each to the Northern General Hospital and Southern General Hospital, Liverpool, and £200 to the Hereford Dispensary.—Mr. W. P. Hartley has given a donation of £500 to the Stanley Hospital, Liverpool.—The Rev. Dr. Paton and Mrs. Paton, of Nottingham, have contributed £1000 to the West Kirby, Cheshire, Convalescent Home in memory of their son.—The late Dowager Lady Forester, of South Audley-street, London, has bequeathed £1000 each to King's College Hospital, St. George's Hospital, London, the Salop Infirmary, and the Ironbridge Dispensary.—In connexion with the opening by the Princess of Wales on the 3rd ult. of the new British Home for Incurables at Streatham a gentleman has forwarded a donation of £1000 to endow a bed "in memory of his brother."—The Duke of Westminster has sent a donation of £30 to the Belgrave Hospital for Children, Gloucester-street, Pimlico.—The late Mr. John Scott of Hunslet-road, Leeds, has bequeathed £1000 each to the Leeds General Infirmary and the Leeds Dispensary.—Mr. George Goldsmid, late of 114, Piccadilly, London, has bequeathed £50 each to the Jews' Hospital and Orphan Asylum, Lower Norwood, University College Hospital, the Hospital for Sick Children, Great Ormond-street, and Queen Charlotte's Lying-in Hospital, Marylebone.—The late Mrs. A. S. Yonge of The Crescent, Plymouth, has bequeathed £1000 to the South Devon and East Cornwall Hospital, and £200 to the Plymouth Public Dispensary.—The committee of the Devon and Exeter Hospital announce the receipt of legacies of £1800 from Miss Joy Webster and £269 from Miss Mary Thomas.—The late Mrs. Elizabeth Allan of Gorsey Wood, Bournemouth, has bequeathed out of the estate of her late husband £10,000 each to the National Hospital for the Paralysed and Epileptic, the London Hospital (Whitechapel-road), and the City of London Hospital for Diseases of the Chest (Victoria-park); £5000 each to the Cancer Hospital (Brompton) and the Brompton Hospital for Consumption; £2000 each to the Middlesex Hospital, Guy's Hospital, St. Thomas's Hospital, King's College Hospital, and the Great Northern Central Hospital; £1000 each to the Royal Hospital for Diseases of the Chest (City-road), the West-end Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy (Welbeck-street), the Hospital for Diseases of the Skin (Blackfriars), the National Orthopædic Hospital for the Deformed (Great Portland-street), the Royal Hospital for Incurables (West-hill, Putney), St. Mark's Hospital (City-road), St. Peter's Hospital for Stone (Henrietta-street), the East London Hospital for Children and Dispensary for Women (Shadwell), the Hospital for Sick Children (Great Ormond-street), the Victoria Hospital for Children (Queen's-road-Chelsea), the British Home for Incurables (Clapham), and the Asylum for Idiots (Earlswood); and £500 to the Surgical Aid Society (Salisbury-square), all free of duty. She appoints and bequeaths the residue of the estate of her late husband and the residue of her own estate to the National Hospital for the Paralysed and Epileptic, the London Hospital, Whitechapel-road, and the City of London Hospital for Diseases of the Chest, Victoria-park.

Parliamentary Intelligence.

HOUSE OF COMMONS.

IN SUPPLY.

SATURDAY, AUG. 18TH.

Hours of Railway Servants.

LAST week we expressed our gratification with regard to the increased attention which is being paid by members of the House of Commons to the question of the number of hours worked by railway signalmen, and at the same time expressed the hope that the Board of Trade would exercise their full powers in regard to the matter. Of this we are glad to see an assurance by Mr. Bryce, who stated in the course of the discussion on Supply that the powers given by Parliament in the interests of the railway servant and of the travelling public would be used to the utmost.—Mr. Dodd complained that the Board of Trade were lax in putting the powers conferred upon them into force. Many complaints had been made respecting the long hours worked by the servants of certain railway companies, but no action had yet been taken by the Board of Trade. It was difficult to know exactly what was being done until the report of the Board was presented to Parliament, and he urged that more energy should be shown.—Sir A. Rollit had noticed a generally expressed determination on the part of the Board not to protect the public against the railway companies.—Mr. Warner thought that, with reference to the hours of railway servants, the Board had not shown sufficient energy.—Mr. John Burns was of opinion that the Act recently passed with respect to railway servants' hours of labour had done a great deal of good as far as three or four of the large companies were concerned, but the Act had been evaded in many cases. He urged the President of the Board of Trade to appoint three or four men who had had practical experience as railway servants to be assistant railway inspectors.—Mr. Bryce, in defence of the Board, said that action was constantly taken since the passing of the Railway Servants (Hours of Labour) Act, 1891, and whenever the Board received notice, even in the most informal way, that the companies were requiring their servants to work excessive hours, that was deemed sufficient to cause the Department to take action.—Mr. A. C. Morton hoped that the Board would do its best to see that last year's Act affecting the hours of railway servants was carried out by independent Commissioners.

MONDAY, AUG. 20TH.

Inspectors of Workshops.

Mr. Keir Hardie wished to know whether the ten recently appointed workshop inspectors covered the same area as the 140 sanitary inspectors; and whether the salaries of the former amounted only to £1000 per annum and the latter to £20,000. He also asked for a return of the number of notifications sent to the workshop inspectors by local authorities, and the number of complaints of insanitation preferred by workshop inspectors to the sanitary authorities in London.—Mr. Asquith stated, in reply, that he did not know how the figures 140 and £20,000 were arrived at. In addition to the ordinary factory staff, since 1892 he had appointed ten inspectors' assistants especially for inspecting workshops in the county of London, with salaries of £100 rising to £150. During the same period 124 sanitary inspectors had been appointed in the same area, and for the most part with the same salary. The duties of the latter are much wider than those of the former. The number of notifications by local authorities to workshop inspectors was 292, and the number of complaints by workshop inspectors to local authorities 1315.

WEDNESDAY, AUG. 22ND.

Chelsea Hospital for Women.

Mr. Stuart asked the Home Secretary whether his attention had been called to recent allegations with respect to the Chelsea Hospital for Women, and whether he would order an inquiry into the facts.—Mr. G. Russell said the Home Office had private reasons for believing that the allegations made in the press were not correct. The Home Secretary had no power to order an inquiry, but if the hon. member would communicate privately with him (Mr. Russell) he would tell him what he knew of the matter.

THURSDAY, AUG. 23RD.

The Qualifications of Poor-law Inspectors.

Mr. A. C. Morton asked the President of the Local Government Board what technical qualifications were required by the Board for the appointment of inspectors of the Local Government Board.—Mr. Shaw-Lefevre said that no special rules were laid down with respect to the qualifications of those inspectors. During the last twenty years the officers appointed had almost without exception held office as assistant inspectors and had thus obtained experience in the inspection of the workhouses and the other duties which devolved on inspectors. There were also two medical inspectors, one of whom acted with the inspector of the district and made special inspection where the assistance of a medical man was desired.—Referring to another question by Mr. Morton on the subject of workhouse nursing, Mr. Shaw-Lefevre said that, whenever required, visits would be made by the medical inspectors. He was aware that in many unions the guardians still relied to a greater extent than was desirable on untrained nurses, and this matter was constantly brought under the notice of the boards of guardians by the Local Government Board. There had in recent years been a considerable number of qualified nurses, and this had been largely due to the action of the Board and their inspectors. He would give the whole subject, including the subject of the efficiency of the inspection, his very careful consideration during the coming recess.—Mr. A. C. Morton asked how it was that the inspectors were unable to discover

the cruelties practised upon little children at the Brentwood schools.—Mr. Shaw-Lefevre said it was very difficult to discover cases of cruelty unless complaint was actually made. It very often happened that the children were terrorised and prevented from making complaints to the inspectors.—Mr. Morton: Would the inspectors take any opportunity of seeing the children themselves?—Mr. Shaw-Lefevre: Oh, yes; undoubtedly they do.

The Hours in Bakeries.

Mr. Barrow asked the Secretary of State for the Home Department whether his attention had been called to an inquest held at Bermondsey on Tuesday, Aug. 21st, on the body of Henry Bortsh, a baker, who was reported to have worked twenty-one hours in a bakehouse, and whether he would take the necessary steps to prevent men from being employed such a number of hours in succession.—Mr. Russell said: The Secretary of State's attention has been called by a newspaper report to this sad case. We feel that it is a deplorable thing that anyone should work for such excessive hours, but the law at present imposes no limit upon the labour which adult men may undertake.—Mr. Burns asked whether the time had not arrived when the hours in the bakery trade should be reduced and underground bakeries abolished altogether.—Mr. Russell said they were all agreed upon the subject, but the question was whether it should be done immediately and by executive authority.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ANDERSON, JAS. K., M.D. Edin., L.R.C.S., has been reappointed Surgeon to the Arbroath Infirmary.

BAILEY, R. C., M.B. Lond., B.S., M.S., L.R.C.P., F.R.C.S., has been appointed Surgeon to the St. Pancras Dispensary.

BIGGAM, J., M.D., C.M. Edin., has been appointed Medical Superintendent to the Hospital at Cotwall End, Sedgeley.

BLISS, E. W., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Medical Officer to the St. Marylebone Infirmary, vice Dr. H. Wise, resigned.

BORTHWICK, THOMAS, M.D. Edin., Ch.M., has been appointed Honorary Bacteriologist to the Adelaide Children's Hospital, South Australia.

COLEMAN, M. D., M.D. Aberd., M.R.C.S., D.P.H., R.C.P.S. Eng., has been reappointed Medical Officer for the Surbiton District of the Kingston Union.

COULSON, J. E., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer to the Workhouse and Infirmary of the St. George's Union.

CROSSKEY, W. F., M.D., C.M. Glasg., has been appointed Honorary Consulting Surgeon to the Lewes Infirmary.

DEWAR, JAS. A., M.D., L.R.C.S. Edin., has been appointed Senior Consulting Physician to the Arbroath Infirmary.

DUNCAN, WM., M.D., F.R.C.S., M.R.C.P., has been appointed Physician to the In-patient Department of the Chelsea Hospital for Women.

EARDLEY-WILMOT, C., M.D., has been appointed Senior Assistant Medical Officer to the Middlesex County Asylum, Tooting, vice F. H. Ward, resigned.

EDEN, T. WATTS, M.D., M.R.C.P., has been appointed Physician to the Out-patient Department of the Chelsea Hospital for Women.

FENTON, W. H., M.D., M.A., has been appointed Physician to the In-patient Department of the Chelsea Hospital for Women.

GILES, ARTHUR E., M.D., M.R.C.P., B.Sc., has been appointed Physician to the Out-patient Department of the Chelsea Hospital for Women.

GRACE, GEORGE H., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Castleton Sanitary District.

LAING, DAVID, M.D., C.M. Edin., has been reappointed Surgeon to the Arbroath Infirmary.

LOCK, G. H., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Middlesex Hospital.

MOLYNEUX, J. P., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Police Surgeon for the Haydock, Golborne, and Ashton-in-Makerfield District.

O'CALLAGHAN, ROBT., F.R.C.S. Irel., has been appointed Physician to the Out-patient Department of the Chelsea Hospital for Women.

PARSONS, J. INGLIS, M.D., M.R.C.P., has been appointed Physician to the Out-patient Department of the Chelsea Hospital for Women.

PETERS, A. J. A., L.R.C.P. L.R.C.S. Edin., L.F.P.S., L.M. Glasg., has been reappointed Surgeon to the Arbroath Infirmary.

ROLLESTON, L. W., M.B., has been appointed Junior Assistant Medical Officer to the Middlesex County Asylum, Tooting, vice C. Eardley-Wilmot, promoted.

RUSSELL, JOHN, M.D., C.M. Aberd., has been reappointed Surgeon to the Arbroath Infirmary.

SHEPPARD, A. M., M.B., Ch.M. Syd., has been appointed House Surgeon to the Central London Ophthalmic Hospital, Gray's-inn-road.

SMYTHE, LEWIS, M.D. Glasg., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Lewes Infirmary.

WINTER, E. S., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon to the Western General Dispensary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £100 per annum, with rooms and attendance.

CLAPHAM GENERAL AND PROVIDENT DISPENSARY.—Medical Officer. Applications to the Hon. Sec., 42, Manor-street, Clapham, S.W.

COUNTY ASYLUM, Prestwich, Manchester.—Pathologist. Salary £200 per annum, with board, residence, and washing.

DERBY BOROUGH ASYLUM.—Assistant Medical Officer. Salary £100, and board. Applications to Dr. Macphail, Rowditch, Derby.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon for six months. Board, residence, and washing provided.

GRAVESEND HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

LIVERPOOL DISPENSARIES.—Head Surgeon for the North Dispensary and a Head Surgeon for the South Dispensary. Salary in each case £200 per annum, with apartments, board, and attendance. Also Assistant Surgeon for the South Dispensary. Salary £80 the first year and £90 per annum afterwards, with apartments, board, and attendance. Applications to the Secretary, Leith Offices, Moorfields, Liverpool.

MEMORIAL HOSPITAL, Jarrow-on-Tyne.—House Surgeon for three years. Progressive salary of £130, £150, and £170 respectively, and to reside and board free in the hospital.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Physician.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary £30 per annum, with board, attendance, and washing.

NORTH WALES ASYLUM, Denbigh.—Second Assistant Medical Officer. Salary £100, with board, washing, and apartments.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Brighton.—House Surgeon. Salary £30 per annum, with board, lodging, and washing. No stimulants.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—Assistant House Surgeon. Salary £30, with board and washing.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Assistant House Surgeon. Board, residence, and laundry provided.

SEAMAN'S INFIRMARY, RAMSGATE AND ST. LAWRENCE DISPENSARY.—Locum Tenens for two weeks from Sept. 3rd. £2 a week, with board, lodging (not alcohol), and third-class return fare from London. Address, H. S., Seaman's Infirmary, Ramsgate.

SHEFFIELD UNION.—Resident Assistant Medical Officer (single or widower) for the Workhouse at Fir Vale, Pitsmoor. Salary £100 per annum, with apartments, rations, and the other usual allowances Applications to the Clerk to the Guardians, Union Offices, Sheffield.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant for six months. Board and residence provided.

ST. PETER'S HOSPITAL, Henrietta-street, Covent-garden, W.C.—House Surgeon for six months. Salary at the rate of 50 guineas a year, with board, lodging, and washing, and an allowance for wine, &c.

Births, Marriages, and Deaths.

BIRTHS.

COCKELL.—On Aug. 17th, at Forest-road, Dalston, N.E., the wife of Fredk. E. Cochell, jun., M.R.C.S. Eng., of a daughter.

DABBS.—On Aug. 16th, at 14, Bradshaw-street, Ross-side, Manchester, the wife of Charles John Dabbs, M.R.C.S., of a daughter.

FELKIN.—On Aug. 18th, at Alva-street, Edinburgh, the wife of Robert W. Felkin, M.D., of a son.

LOGIE.—On Aug. 10th, at Raglan, Newport, Mon., the wife of A. G. S. Logie, M.B., of a daughter.

MACLEOD.—On Aug. 20th, at Tower-place, Shrewsbury, the wife of Harold H. B. MacLeod, M.R.C.S., of a son.

NEALE.—On Aug. 15th, at 24, Hamilton-terrace, Milford Haven, the wife of Albert E. Neale, M.B., B.S., of a son.

WHITCOMBE.—On Aug. 14th, at Earl's-court-road, the wife of P. Percival Whitcombe, M.B. Lond., of a daughter.

WORNUM.—On Aug. 13th, at College-terrace, Belsize-park, Hampstead, N.W., the wife of George Porter Wornum, M.R.C.S. Eng., of a son.

MARRIAGES.

ALLDEN—COX.—At Holy Trinity Church, Wimbledon, on Aug. 22nd, by the Rev. C. P. Clarke, Vicar, Sidney J. Allden, M.D., of Bridport, to Annie, eldest daughter of John Cox, Esq., of Wimbledon, formerly of Luccombe, Dorset.

AUSTIN—SEYMOUR.—On Aug. 21st, at St. Paul's, Clifton, Reginald F. E. Austin, Army Medical Staff, eldest son of Colonel E. Austin, Indian Staff Corps, to Georgiana Adelaide, elder daughter of the late Robert George Seymour, formerly of Clevedon, Terenure-road, Dublin.

FARMAN—JOHNSTON.—On Aug. 21st, at St. Leonard's Church, Streatham, Robert James Farman, surgeon, elder son of George C. Farman, S.I.R., of Peckham-rye, to Minnie Harriet, elder daughter of W. H. Johnston, of Hopton-road, Streatham.

HALE—KYNASTON.—On Aug. 15th, at the Cathedral, Durham, Geoffrey Edward Hale, M.B., son of the late Rev. Edward Hale, of Eton College, to Mary Kynaston.

DEATHS.

AIRD.—On June 22nd, at Esk, Queensland, suddenly, Charles Mitchell Aird, M.B., C.M., aged 29, son of the Rev. Hugh Aird, D.D., Brechin. Friends omitted please accept this intimation.

CHAPMAN.—On Aug. 18th, at Carlton-hill, N.W., Clarence Chapman, M.R.C.S.E., aged 64.

MURPHY.—On Aug. 17th, at Mount Vernon, Sunday's Well, Cork, Miah William Murphy, Surgeon-General A.M.S. (retired), aged 80 years.

WILSON.—At his residence, Cotham Brow, Bristol, George Wilson, M.R.C.S., M.O.H. Clutton Sanitary Authority over twenty years.

WRIGHT.—On Aug. 15th, at 9, Brixton-hill, William Kelson Wright, F.R.C.S., aged 83 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Aug. 23rd, 1894.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
Aug. 17	30·07	N.	58	53	106	65	49	.29	Bright
,, 18	30·08	N.	61	56	109	67	54	...	Cloudy
,, 19	30·07	N.W.	60	56	92	65	53	·04	Cloudy
,, 20	29·85	N.W.	59	53	118	68	53	·03	Cloudy
,, 21	[29·68	N.W.	57	52	95	64	48	...	Bright
,, 22	29·80	N.W.	59	55	105	70	54	...	Cloudy
,, 23	29·83	S.E.	60	59	65	60	57	·02	Raining

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICE.

THE INDEX TO THE LANCET.

IN order to facilitate the work of reference to the volumes of THE LANCET, duplicate copies of the Index to each half-yearly volume are published in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Manager of THE LANCET.

AN UNBURIED CORPSE.

AN extraordinary case of neglect, in leaving the body of a woman unburied for a period of nearly three weeks, has been reported from Chelsea. The body of a woman is said to have been removed from the infirmary by a local undertaker employed by the husband, who, however, was unable to obtain the necessary funds to bury it. The corpse remained on the undertaker's premises until it was interred at the parish expense, nineteen days after death.

E. D. (Brigg).—We have no more information than that supplied in the special correspondence referred to.

A QUERY.

To the Editors of THE LANCET.

SIRS,—Can any of your readers throw any light on the unexpected result of the administration of a sedative mixture of liquor bismuthi and dilute hydrocyanic acid? The dose was a drachm of the former with two minims and a half of the acid, and the result was severe spasmodic pain in the stomach, lasting for about an hour after each dose. The pain did not become severe till several doses had been taken, and was apparently caused by extreme flatulent distension of the stomach. I have read somewhere that in a case of poisoning by hydrocyanic acid the abdomen became rapidly distended, especially about the epigastrium. The case was an interesting one, but would require too much space to detail here. Could the symptoms be explained on the theory that the action of the acid on the nerve endings in the stomach paralysed the action of its walls and allowed the organ to become over-distended?

I am, Sirs, yours faithfully,

Aug. 21st, 1894. M.B.

RELIEF TO A DEAD PERSON.

AN extraordinary error came to light at a meeting of the Horsham (Sussex) Board of Guardians last week. The clerk reported that the medical officer had recommended "extras" in the shape of medicine, meat, milk, &c., to a Mrs. Pannell, lately living at St. Leonards-road. The "extras" were recommended on July 7th, 15th, and 26th, whereas the woman died on July 5th. On being communicated with the medical officer wrote that the mistake arose through the inadvertence of his clerk, who had omitted to tell him that Mrs. Pannell was dead. Some discussion ensued, one member stating that he thought the medical officer should be informed that his book should be kept in better order. It was decided that the clerk should write to him to this effect.

Dr. B. (Belsize-park).—We regret that we cannot insert our correspondent's letter, though we are quite at one with his views.

"TREATMENT OF DIPHTHERIA BY INSUFFLATIONS AND TABLOIDS OF SULPHITE OF MAGNESIUM."

To the Editors of THE LANCET.

SIRS,—Since I read the letters of Dr. Martin on the advantages of this treatment in diphtheria I have had many opportunities of giving it a fair trial, with, I am glad to say, excellent results. At first I used the drug in conjunction with other topical applications, but recently I rely on it solely, dusting the throat freely in bad cases and using it as a gargle as well, and am never disappointed with the result. From my observation of the effects of the treatment I am satisfied that if used in the very early stages of the disease, before the appearance of the membrane, it will modify the subsequent attack and often prevent the formation of the membrane. I have seen this in a case where an undoubted attack of the disease affected one member of a household, and where other members treated with sulphite of magnesium were attacked with initial sore-throat, swelling of submaxillary glands, &c., without any formation of membrane. If the disease is fully developed I believe, except in cases where the patient is moribund or in bad laryngeal attacks, the free application of the sulphite to the throat will generally give most satisfactory results. I am at present treating a case of pharyngeal diphtheria at the Isolation Hospital here. I saw the patient, a boy six years old, on Sunday, Aug. 19th. The glands of the neck were enormously swollen. The throat showed a "churned" condition, a large quantity of mixed mucus and blood filling up the interspace between the tonsils, which were enlarged and covered with the typical membrane, as were the uvula and posterior wall of the pharynx. I had him removed to hospital and put him under treatment at once. Two days after the commencement of the treatment the brawny swelling of the neck had altogether subsided, and the membrane had completely disappeared on the fourth day. There has been an epidemic of diphtheria in this neighbourhood until quite recently, and of the cases in which I had an opportunity of trying the sulphite fairly only one was fatal. In that case the patient succumbed to an attack of laryngeal diphtheria, when the disease, which first attacked the pharynx and was apparently doing favourably, suddenly reappeared (not by continuity) in the larynx and the patient, a delicate, strumous child, quickly died of asphyxia. In my opinion the sulphite, if long continued, is not innocuous. I believe it should be discontinued directly the membrane disappears, as it seems to increase the already marked depression. It is important to emphasise the fact that this line of treatment supplements, without supplanting, the old treatment—tonics, iron, and strychnia &c., with a generous diet, port wine &c. If medical men in charge of isolation hospitals would try the remedy I believe it would be found extremely efficacious.

I am, Sirs, yours truly,

Guildford, Aug. 19th, 1894. WM. GEO. NIALL, M.D.&c. R.U.I.

To the Editors of THE LANCET.

SIRS,—In answer to Dr. Martin's request for information as to the results of the treatment of diphtheria recommended by him, I am glad to give the following details of cases treated by me. In this neighbourhood a continuous epidemic of diphtheria had prevailed for twelve months, and no treatment that I adopted seemed to have any beneficial effect on my patients, many of whom died. After reading Dr. Martin's letters I adopted the treatment he advocated, and since then all my cases have recovered. This series includes fifteen cases, four of whom are adults. Five of the cases were under three years of age; in one of these the submaxillary lymphatic glands suppurated. One boy ten years of age had patches of membrane on the uvula and both tonsils, croupy cough, whispering voice, attacks of dyspnœa, and, during convalescence, aphonia and regurgitation of fluid through the nares; another boy ten years of age had croupy cough, whispering voice, and, on laryngoscopic examination, patches of membrane in the rima glottidis. I dusted the powder frequently on all the patches that I could reach, and gave liquor ferri perchloridi and liquor strychniæ as tonics. From the time of applying the powder the membrane ceased to spread, the temperature fell, and the general condition of the patients improved. The drug appeared to be quite harmless and gave rise to no unpleasant symptoms. Doubtless the advantage to be gained by applying this remedy directly to the trachea and larynx in cases of laryngeal diphtheria in which tracheotomy might be necessary would also be considerable.

I am, Sirs, yours faithfully,

MAURICE E. LING, M.R.C.S., L.S.A.

Saxmundham, Suffolk, Aug. 17th, 1894.

BRILLIANT RESCUE BY AN ARMY SURGEON.

ALONG the bank of the Ticino, shortly after it leaves the Lago Maggiore, a battalion of the local regiment had the other day been told off to bathe, and Dr. Arnaldo Corbellini was the medical officer in attendance. One of the men, a Sardinian called Cozzu, disobeying orders, ventured on a header in a dangerous pool formed by the *débouchement* of a mountain torrent and, being seized with "cramp," was swept down by the stream. His cries for help brought first a sergeant and then a common soldier to his aid; but the current was too strong for them, and they returned with difficulty to the bank. Dr. Corbellini had by this time hastened to the scene and plunged into the water just as Cozzu was disappearing. Rapidly gaining on the drowning man, he dived under him, brought him to the surface, and finally to the bank, where, single-handed, he put in practice Marshall Hall's ready method with such success that Cozzu, quite unconscious when rescued, came to himself shortly afterwards. For this feat of combined courage and skill, performed as it was in presence of the whole battalion, Dr. Corbellini received the cordial congratulations of his brother officers and has just been nominated as worthy of the *medaglia al valore civile* (medal for civic valour), which will in due course be conferred on him.

T. L. H.—We think it would be a very invidious proceeding to publish such a list in our columns; but we will endeavour to advise our correspondent upon the standing of any particular institution or institutions he may select.

Exalgine.—There is nothing in the qualifications mentioned to justify the title suggested for the visiting card and brass plate.

FUMIGATION OF INFECTED APARTMENTS BY SULPHUR.

To the Editors of THE LANCET.

SIRS,—Acting upon the principle that honour should be rendered to those to whom it is due, I venture to address to you a few remarks anent a paragraph which appeared in the *Daily Telegraph* of Monday, Aug. 13th. It was there stated that in the recent outbreak of small-pox the means adopted for its suppression by the Marylebone sanitary authorities was the most ancient disinfectant—sulphur—but in an entirely new form, and describing the method of its production as a gas and the process of its operation. In such a paper as THE LANCET it is unnecessary for me to go into details of the old process of fumigating infected apartments with burning sulphur or into the chemical production of gases. I therefore, not only as a subject of interest to your numerous readers, but also as a matter of justice to the inventor (Mr. Edward Soy, surgeon, of London), draw attention to the fact that in the year 1891 he applied for a provisional for his invention for generating dioxide of sulphur in suitable works and storing it in tubes or other vessels of *glass* at a pressure, or temperature, or both combined, to liquefy the same, the said tubes to be hermetically sealed after charging with the liquefied gas. A complete specification of the invention was afterwards granted. In the paragraph referred to of Aug. 13th in the *Daily Telegraph*, *tin* is mentioned as the vessel used for storing the liquefied gas, but it is obvious to the most unscientific mind that the glass tube must be infinitely preferable to one of metal. In using glass it is only necessary to place the tube crosswise in the receptacle provided, giving it a smart tap in order to release the liquefied gas from pressure, when it immediately resumes its gaseous form. The rapidity with which it is accomplished renders the gas more easily diffusible, and with far less objectionable result to the operator than when an opening has to be cut into resistant metal. Another great advantage will be that, glass being less expensive than metal, the public will be able to procure the disinfectant at a much cheaper rate. The inventor not only claims the title of "disinfectant" for his patent, but also that it is a vermin and germ destroyer and can be used for a variety of medical and sanitary purposes. Trusting that I have not encroached at too great length upon your space,

I am, Sirs, yours faithfully,

Bournemouth, Aug. 17th, 1894. JUSTITIA.

CURIOUS CASE OF IMPALEMENT.

A SINGULAR case of impalement is reported by M. Parizot in the *Bourgogne Médicale*. A little boy ten years of age fell from a peach tree into which he had climbed, alighting on a thin upright piece of wood forming part of a fence. The left half of the scrotum was torn open, but the tunica vaginalis was not touched. In addition to this wound it was noticed that there was a painful swelling all up the left side of the body from the scrotum to the nipple, and this was supposed to be due to a contusion inflicted by the fall. On the third day, however, the wound of the scrotum began to suppurate, and it was found that a quantity of pus could be expressed by running the finger down the longitudinal swelling. A drainage-tube was therefore inserted, and this could be pushed up as far as the nipple. An opening was then made at the nipple, and a long drainage-tube passed through it and out through the wound in the scrotum. Prolonged hot baths and injections of boiled water soon improved the child's condition, which at first was rather alarming. On the eleventh day a piece of cloth appeared in the discharge from the upper wound, which had been torn out of the child's trousers and pushed by the wooden stake all along the track. Ultimately the patient made a good recovery.

THE CIVIL RIGHTS DEFENCE COMMITTEE.—THE ANDERSON APPEAL FUND.

THE following additional subscriptions have, since the publication of the list in THE LANCET of July 28th last, been received or promised:—

Professor McCall Anderson, Glasgow	£1	1	0
Mr. Andrews, Hammersmith	0	10	6
Dr. Aveling, Upper Clapton	0	10	6
Dr. Berry, Wigan	0	10	0
Dr. Boxell, Barbados ...	1	1	0
Dr. Branch, St. Kitts ...	1	1	0
Dr. Caldwell, Shotts ...	1	1	0
Dr. Cheadle, London ...	1	1	0
Mr. Cureton, Shrewsbury	1	1	0
Mr. Farnell, Eastbourne...	1	1	0
Mr. Fearnhead, Heywood	0	10	6
Dr. T. Law Gaskin, Barbados	1	0	0
Dr. Handyside, H.M.S. *Blake*	1	0	0
Dr. Huggard, Davos Platz	£1	1	0
Mr. Jackson, Plymouth...	0	10	6
Mr. Jeaffreson, Framlingham	0	10	6
Mr. Jones, Aberdare ...	1	1	0
Dr. Lang, Bromley ...	0	10	6
Dr. Little, Dublin... ...	1	1	4
Mr. London, British Guiana	1	1	0
Mr. Palmer, Chelsea ...	0	5	0
Dr. J. R. Phillips, Barbados	1	0	0
Mr. Ronaldson, Haddington	1	1	0
Dr. Semon, London (further subscription)...	1	1	0
Dr. Shirlaw, Ferryhill ...	1	1	0
Mr. Stear, Saffron Walden	0	10	6
Dr. Tothill, Blackheath ...	0	10	6
Dr. Wade, Wells	1	1	0

The names and subscriptions of Mr. Jeaffreson and Dr. Shirlaw were by clerical error omitted from the previously published list. In the list supplied to us also the following errors occurred:—For "Professor Barner" read Professor *Barker*; for "Dr. Gonde," Dr. *Goude*, London; for "Mr. Halke," Mr. *Hulke*, London; for "Messrs. Lee, Coerar and Co.," Messrs. Lee, *Crerar* and Co.; for "Dr. Sansom," Dr. *Sassoon*.

WE have received from the Castle Donington Hygienic Hosiery Works samples of their woollen underclothing. They are made of various textures suitable for either summer or winter wear, and are soft, light, and, so far as we have ascertained, not liable to shrink.

Post Mortem.—We think our correspondent was treated with scant courtesy and consideration in this matter. His best course in future would be to communicate directly with the police or the coroner.

Mr. G. Foster.—Our advertisement columns furnish the list required. Our correspondent's medical attendant would be able to give him more special advice on the subject.

Practitioner.—We are not aware of any exemption either for the carriage or the groom, and our correspondent should apply for a licence.

ERRATUM.—In Sir Charles Cameron's address on Public Health, in THE LANCET of Aug. 18th, p. 373, the deaths per 1000 of persons from typhoid fever should have been per *100,000*.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Gt. Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-square (2 P.M.), North West London (2 P.M.).

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), Cancer (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received:—*Manchester Courier, Huddersfield Daily Chronicle, Devon Daily Gazette, Macclesfield Courier, Derbyshire Advertiser, Bristol Times, Oban Times, Northern Whig, Croydon Chronicle, Birmingham Gazette, Midland Evening News, North British Daily Mail, Weston-super-Mare Gazette, To-day, Vegetarian, The Belgian News, The Laundry Record, City Press, Hertfordshire Mercury, West Middlesex Standard, Weekly Free Press and Aberdeen Herald, Sanitary Record, Reading Mercury, Pioneer Mail, Local Government Chronicle, Liverpool Daily Post, Bristol Mercury, Times of India, Builder, Yorkshire Post, Leeds Mercury, Architect, Local Government Journal, Surrey Advertiser, Evening Express (Liverpool), Courrier de la Presse, St. Bartholomew's Hospital Journal, Galignani Messenger, Dorset County Chronicle, Hampshire Advertiser, Kelso Mail, Science Siftings, European Mail, Durham Chronicle, Bombay Gazette, Brisbane Telegraph, Scotsman, Norfolk News, Forfar Herald, Citizen, &c. &c.*

Communications, Letters &c. have been received from—

A.—Mr. R. B. Anderson, London; Mr. J. Altschul, London; Royal Aquarium, Director of, London; Anderson's College Medical School, Secretary of; Alpha, London; Ace.

B.—Dr. T. Lauder Brunton, London; Dr. P. Boobbyer, Nottingham; Dr. A. G. Bateman, London; Dr. P. H. Boyden, Portland; Mr. J. M. Buck, Beccles; Mr. T. B. Browne, London; Mr. C. Birchall, Liverpool; Messrs. Blackie and Son, London; Messrs. Blondeau et Cie., London; Messrs. R. Bentley and Son, London; *British and Colonial Druggist*, London, Manager of; B. B., London.

C.—Sir Charles A. Cameron, Dublin; Professor Corfield, London; Mr. J. Coates, London; Mr T. Cook, Malvern; Mr. J. Coutts, London; Señor C. Chiesa, Milan; Messrs. C. J. Clay and Sons, London; Central London Throat and Ear Hospital, Secretary of; Cortland Wagon Co., London; Civil Service Coöperative Society, Secretary of; Church Sanitary Association, Secretary of; Climate, London.

D.—Dr. T. Duka, London; Mr. W. Evans Darby, London; Mr. P. De Santi, London; Mr. J. J. Dalton, Wigton; Messrs. Domeier and Co., London; Director-General, Army Medical Department, London; Derby Borough Asylum, Medical Superintendent of; Daleth, London.

E.—Mr. E. H. Ellison, Castleton; Messrs. Eason and Son, Dublin; Ebor, Lancs.

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J.—Sir George Johnson, Stanton St. John; Mr. E. Jeffery, Cornwall; Messrs. W. and A. K. Johnston, London; Jarrow-on-Tyne Memorial Hospital, Secretary of; Justitia, Bournemouth.

K.—Mr. A. Kinder, Leicester; Mr. C. C. Kirk, Philadelphia.

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O.—Dr. F. Orton, London; Messrs. W. Oppenheim, London.

P.—Mr. Stephen Paget, London; Mr. Y. J. Pentland, Edinburgh; Post Mortem, Heywood; Messrs. Pickardt and Co., London; Prestwich County Asylum, Superintendent of.

Q.—Queen Margaret College, Glasgow, Secretary of.

R.—Dr. T. Robinson, London; Dr. W. Robertson, Newcastle-on-Tyne; Mr. J. Rogerson, London; Messrs. Reynolds and Branson, Leeds; Resident, London; R. R., London.

S.—Dr. W. W. Sinclair, Birmingham; Dr. J. A. Shaw-Mackenzie, London; Mr. H. Wilfrid Scriven, London; Mr. G. Slater, Sheffield; Mr. J. T. Sarll, London; Mrs. A. Stephens, West Brighton; Messrs. F. Stearns & Co., London; Messrs. Southall Bros. and Co., Birmingham; Messrs. Street Bros., London; *St. Bartholomew's Hospital Journal*, Editor of; Swansea Hospital, Secretary of; Society for the Total Abolition and Utter Suppression of Vivisection, Hon. Secretary of; St. Andrew's Hospital, Northampton, Secretary of; Surgeon, London.

T.—Dr. J. Stopford Taylor, Liverpool; Dr. G. G. Stopford Taylor, Liverpool; Dr. R. Talbot, Melbourne; Mr. Lawson Tait, Birmingham; Mr. D. Thelwall, Aylesbury; Mr. W. Tatham, Ilkeston; Rev. J. Thomas, Liverpool; T. B., London.

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W.—Dr. S. White, Bradford; Dr. J. Wilson, Haverfordwest; Dr. J. R. Whait, Aldeburgh; Prof. Wanklyn, New Malden; Mr. A. Willis, Soham; Mr. A. Wilsden, Wooler; Mr. A. B. Wheeler, Manchester; Mr. A. G. Wynen, London; Mr. W. B. Winckworth, London; Messrs. Welford and Sons, Limited, London; Walton-on-the-Hill (Liverpool) Local Board, Clerk of.

X.—X. Y., London.

Y.—Yorkshire College, Leeds, Secretary of.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. W. S. Alexander, Ramelton, co. Donegal; Dr. H. Appleton, Bournemouth; Mr. R. R. Anderson, Carmarthen; Amos, London; Alpha, London.

B.—Dr. J. M. Barbour, London; Dr. C. B. Braithwaite, Golcar; Mr. W. J. Beale, London; Mr. W. H. Boger, Towey; Mr. G. de V. Belson, Bampton; Messrs. Black and Johnston, Brechin; Bethnal-green-road, 386; B., London; Beta, London.

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O.—Omega, London.

P.—Plymouth Incorporation, Clerk of; Phillips, London.

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